



**PROJECT NAME AND NUMBER: 5158\_SOLAR PLANT MAINTENANCE FOR A PERIOD OF FIVE (5) YEARS  
AT CAPE TOWN INTERNATIONAL AIRPORT**

**NEC 3: TERM SERVICE CONTRACT (TSC)**

**Between AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED**

**Applicable at Cape Town International Airport**

(Registration Number: 1993/004149/30)

and

(Registration Number : \_\_\_\_\_)

for **Solar Plant Maintenance at Cape Town International Airport for  
a Period of Five (5) Years**

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Part C3 Employer Service Information	
Part C4 Site Information	

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**PART C1: AGREEMENT AND CONTRACT DATA**

**C1.1 Form of Offer and Acceptance**

**Offer**

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract for the procurement of the following service:

**Solar Plant Maintenance for Cape Town International Airport for a Period of Five (5) Years.**

The Contractor, identified in the offer signature block, has examined this document and addenda hereto as listed in the schedules, and by submitting this offer has accepted the conditions thereof.

By the representative of the Contractor, deemed to be duly authorised, signing this part of this form of offer and acceptance, the contractor offers to perform all of the obligations and liabilities of the Contractor under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the Conditions of Contract identified in the Contract Data.

**THE OFFERED TOTAL OF THE PRICES INCLUSIVE OF VAT IS:**

(in words)

.....Rands;

(in figures)

**R**.....

*(The above amount should be calculated as per the guide provided in the Activity Schedule. In the event of any conflict between the amount above and the Activity Schedule, the latter shall prevail.)*

**for the Contractor**

Signature ..... Date .....

Name ..... Capacity .....

(Name and address of organisation) .....

Name and signature of witness .....

This offer may be accepted by the employer by signing the acceptance part of this form of offer and acceptance and returning one copy of this document to the tenderer before the end of the period of validity stated in the tender data, whereupon the tenderer becomes the party named as the contractor in the conditions of contract identified in the contract data.

**Acceptance**

By signing this part of this Form of Offer and Acceptance, the Employer identified below accepts the Contractor's offer. In consideration thereof, the Employer shall pay the Contractor the amount due in accordance with the conditions of contract identified in the contract data. Acceptance of the contractor's offer shall form an agreement between the employer and the contractor upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

- Part C1: Agreements and Contract Data, (which includes this agreement)
- Part C2: Pricing Data and Price List
- Part C3: Service Information
- Part C4: Site Information

Deviations from and amendments to the documents listed in the tender data and any addenda thereto as listed in the tender schedules as well as any changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance, are contained in the schedule of deviations attached to and forming part of this agreement. No amendments to or deviations from said documents are valid unless contained in this schedule.

The contractor shall within two weeks after receiving a completed copy of this agreement, including the schedule of deviations (if any), contact the Service manager (to be confirmed) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the contract data. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed original copy of this document, including the schedule of deviations (if any). Unless the tenderer (now contractor) within five working days of the date of such receipt notifies the employer in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the parties.

**for the Employer**

Signature ..... Date .....

Name ..... Capacity .....

Airports Company South Africa,  
Cape Town International Airport  
Airport Road, Matroosfontein  
Cape Town  
7490

Name and signature of witness ..... ..



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## C1.2 Contract Data

### Part One - Data provided by the *Employer*

Clause	Statement	Data
1	<b>General</b>	
	The <i>conditions of contract</i> are the core clauses and the clauses for main Option:	
	dispute resolution Option:	<b>A: Priced contract with price list and re-imbursable items</b>
	and secondary Options:	<b>W1: Dispute resolution procedure</b>
		<b>X1 Price Adjustment for inflation</b>
		<b>X2 Changes in the law</b>
		<b>X18: Limitation of Liability (as amended in Option Z)</b>
		<b>Z: Additional conditions of contract</b>
	of the NEC3 Term Service Contract (April 2013)	
10.1	The <i>Employer</i> is (Name):	<b>Airports Company South Africa SOC Limited</b>
	Address	<b>Cape Town International Airports Administrative Office Southern Office Block Airport Road, Matroosfontein Cape Town 7490</b>
10.1	The <i>Service Manager</i> is:	Ms Tshego Ntombela and Mr Nkosinathi Khumalo
11.2(1)	The <i>Accepted Plan</i> is	<b>Included in Part C3 of this document, including Annexes thereto as submitted by the Contractor and accepted by the <i>Service Manager</i>.</b>
11.2(2)	The <i>Affected Property</i> is	<b>Cape Town International Airport as set out in Annex A of the Part C4 the Site Information.</b>
11.2(13)	The <i>Service</i> is	<b>The Maintenance of the Solar Plant for Cape Town International Airport as set out in Part C3 <i>Service Information</i>.</b>

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11.2(14)	The following matters will be included in the Risk Register	<b>The Method Statement Planned Maintenance Work (Annex B) Safety, including working at heights Updated Legislated Annexures</b>
11.2(15)	The <i>Service Information</i> is in	<b>The section titled Service Information included as Part C3 of this document.</b>
12.2	The <i>law of the contract</i> is the law of	<b>The Republic of South Africa</b>
13.1	The <i>language of this contract</i> is	<b>English</b>
13.3	The <i>period for reply</i> is	<b>7 calendar days</b>
21.1	The period within which the Contractor provides the Contractor's Plan	<b>14 calendar days from Contract Date</b>
<b>2</b>	<b>The Contractor's Main Responsibilities</b>	<b>Detailed in Part C3 (Service Information)</b>
<b>3</b>	<b>Time</b>	
30.1	The <i>starting date</i> is	<b>Upon contract signing by ACSA</b>
30.2	The <i>Service Period</i> is	<b>Five (5) years from the <i>starting date</i></b>
<b>4</b>	<b>Testing and Defects</b>	<b>No data is required for this section of the <i>conditions of contract</i></b>
<b>5</b>	<b>Payment</b>	
50.1	The <i>assessment interval</i> is on the	25 <sup>th</sup> day of each successive month Effective payment to be made within 30 days of invoice receipt. Assessment will be done immediately after the <i>service</i> .
51.1	The <i>currency of this contract</i> is the	<b>South African Rand (ZAR)</b>
51.2	The period within which payments are made is	<b>30 days</b>
51.4	The <i>interest rate</i> is	<b>The prime lending rate of the Employer's Bank, as determined from time to time.</b>

<b>6</b>	<b>Compensation Events</b>	<b>No data is required for this section of the conditions of contract.</b>
<b>7</b>	<b>Title</b>	<b>No data is required for this section of the conditions of contract.</b>
<b>8</b>	<b>Risks and Insurance</b>	<b>Refer to Part C1.4</b>
83.1	The Employer provides these insurances from the Insurance Table	Insurance against loss of or damage to the services, Plant and Materials comprising Contract Works Insurance, SASRIA Special Risks Insurance and Marine & Air Cargo insurance; and Insurance (Public Liability Insurance) against liability for loss or damage to property (except the services, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the Contractor) caused by activity in connection with the contract; Note: The terms and other matters applicable to these insurances provided by the Employer (and to insurances generally) are detailed in the insurance schedule attached as section C1.4 to the contract ("the Insurance Schedule").
83.1	The Contractor provides these additional insurances	Professional Indemnity Insurance Note: The terms and other matters applicable to this insurance provided by the Employer are likewise detailed in section C1.4 to the contract.
83.2	The minimum amounts of cover or minimum limits of indemnity required for the insurance table	<b>Refer to Part C1.4</b>
<b>9</b>	<b>Termination</b>	<b>No data is required for this section of the conditions of contract.</b>
<b>10</b>	<b>Data for Main Option Clause</b>	
<b>A</b>	<b>Priced Contract with Price List</b>	<b>Tenderer is to provide pricing information for operation and maintenance as described in this document. Contractor will be reimbursed for any works required that is not due to improper maintenance. Refer to Section C2.</b>
<b>11</b>	<b>Data for Option W1</b>	
W1.1	The Adjudicator is	<b>The person appointed jointly by the parties from the list of adjudicators contained below</b>
W1.2	The Adjudicator nominating body is	<b>The current Chairman of Johannesburg Advocate's Bar Council</b>
W1.4	The tribunal is	<b>Arbitration</b>

W1.4	If the tribunal is arbitration, the arbitration procedure is	<b>The arbitration procedure is set out in The Rules for the Conduct of Arbitrations 2013 Edition, 7th Edition, published by The Association of Arbitrators, (Southern Africa)</b>
W1.4	The place where arbitration is to be held is	<b>Johannesburg, South Africa.</b>
W1.4	The person or organisation who will choose an arbitrator	<b>The Arbitrator is the person selected by the Parties as and when a dispute arises in terms of the relevant Z Clause, from the Panel of Arbitrators provided under the relevant Z clause if the arbitration procedure does not state who selects an arbitrator. The Arbitrator nominating body is the Chairman of the Johannesburg Advocates Bar Council.</b>
<b>12</b>	<b>Data for Secondary Option</b>	
<b>X1</b>	<b>Price Adjustment for Inflation</b>	<b>The index referred to in this clause shall be deemed to refer to the CPI index on the <i>starting date</i> as stated under section 30.1. Price adjustment for inflation shall only take place on contract anniversary</b>
<b>X2</b>	<b>Changes in the Law</b>	<b>No data is required for this secondary option.</b>
<b>X18</b>	<b>Limitation of Liability</b>	
X18.1	The Contractor's liability to the Employer for indirect or consequential loss is limited to	<b>Nil - Neither Party is liable to the other for any consequential or indirect loss, including but not limited to loss of profit, loss of income or loss of revenue</b>
X18.2	For any one event, the Contractor's liability to the Employer for loss of or damage to the Employer's property is limited to	<b>The total of the Prices</b>
X18.3	The Contractor's total liability to the Employer for defects due to his design which are not listed on the Defects Certificate is limited to	<b>The total of the Prices</b>

X18.4	The Contractor's total liability to the Employer for all matters arising under or in connection with this contract, other than excluded matters, is limited to	<b>The Contractor's total direct liability to the Employer for all matters arising under or in connection with this contract, other than the excluded matters, is limited to the total of the Prices and applies in contract, tort or delict and otherwise to the extent allowed under the law of the contract.</b> <b>The excluded matters are amounts payable by the Contractor as stated in this contract for:</b> <ul style="list-style-type: none"> <li>- Loss of or damage to the Employer's property,</li> <li>- Defects liability,</li> <li>- Insurance liability to the extent of the Contractor's risks</li> <li>- death of or injury to a person;</li> <li>- infringement of an intellectual property right</li> </ul>
<b>X19</b>	<b>Task Order</b>	
X19.1	Task Order	<b>No Data is required for this secondary option</b>
<b>Z</b>	<b>The <i>Additional conditions of Z1 – Z19 contract are</i></b>	
	<b>Amendments to the Core Clauses</b>	
<b>Z1</b>	Interpretation of the law	
<b>Z1.1</b>	<b>Add to core clause 12.3:</b> Any extension, concession, waiver or relaxation of any action stated in this contract by the Parties, the <i>Service Manager</i> , the <i>Supervisor</i> , or the <i>Adjudicator</i> does not constitute a waiver of rights, and does not give rise to an estoppel unless the Parties agree otherwise and confirm such agreement in writing.	
<b>Z2</b>	<b>Providing the Service:</b>	
<b>Z2.1</b>	<b>Delete core clause 20.1 and replace with the following:</b> The <i>Contractor</i> provides the Service in accordance with the Service Information and warrants that the results of the Service, when complete, shall be fit for their intended purpose.	
<b>Z5</b>	<b>Termination</b>	
<b>Z5.1</b>	<b>Add the following to core clause 91.1, at the second main bullet, fifth sub-bullet point, after the words "assets or":</b> "business rescue proceedings are initiated or steps are taken to initiate business rescue proceedings".	
	<b>Amendment to the Secondary Option Clauses</b>	
<b>Z7</b>	<b>Limitation of Liability:</b>	
<b>Z7.1</b>	<b>Insert the following new clause as Option X18.6:</b> The <i>Employer's</i> liability to the <i>Contractor</i> for the <i>Contractor's</i> indirect or consequential loss is limited to R0.00	

- Z7.2** Notwithstanding any other clause in this contract, any proceeds received from any insurances or any proceeds which would have been received from any insurances but for the conduct of the *Contractor* shall be excluded from the calculation of the limitations of liability listed in the contract

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### Additional Z Clauses

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#### **Z8 Cession, Delegation and Assignment**

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- Z8.1** The *Contractor* shall not cede, delegate or assign any of its rights or obligations to any person without the written consent of the *Employer*, which consent shall not be unreasonably withheld. This clause shall be binding on the liquidator/business rescue practitioner /trustee (whether provisional or not) of the *Contractor*.
- Z8.2** The *Employer* may cede and delegate its rights and obligations under this contract to any person or entity.
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#### **Z9 Joint and Several Liability**

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- Z9.1** If the *Contractor* constitutes a joint venture, consortium or other unincorporated grouping of two or more persons, these persons are deemed to be jointly and severally liable to the *Employer* for the performance of the Contract.
- Z9.2** The *Contractor* shall, within 1 week of the Contract Date, notify the *Service Manager* and the *Employer* of the key person who has the authority to bind the *Contractor* on their behalf.
- Z9.3** The *Contractor* does not materially alter the composition of the joint venture, consortium or other unincorporated grouping of two or more persons without prior written consent of the *Employer*.
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#### **Z10 Ethics**

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- Z10.1** The *Contractor* undertakes:
- Z10.1.1** not to give any offer, payment, consideration, or benefit of any kind, which constitutes or could be construed as an illegal or corrupt practice, either directly or indirectly, as an inducement or reward for the award or in execution of this contract;
- Z10.1.2** to comply with all laws, regulations or policies relating to the prevention and combating of bribery, corruption and money laundering to which it or the *Employer* is subject, including but not limited to the Prevention and Combating of Corrupt Activities Act, 12 of 2004.
- Z10.2** The *Contractor's* breach of this clause constitutes grounds for terminating the *Contractor's* obligation to Provide the Works or taking any other action as appropriate against the *Contractor* (including civil or criminal action). However, lawful inducements and rewards shall not constitute grounds for termination.
- Z10.3** If the *Contractor* is found guilty by a competent court, administrative or regulatory body of participating in illegal or corrupt practices, including but not limited to the making of offers (directly or indirectly), payments, gifts, gratuity, commission or benefits of any kind, which are in any way whatsoever in connection with the contract with the *Employer*, the *Employer* shall be entitled to terminate the contract in accordance with the procedures stated in core clause 92.2. the amount due on termination is A1.
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#### **Z11 Confidentiality**

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- Z11.1** All information obtained in terms of this contract or arising from the implementation of this contract shall be treated as confidential by the *Contractor* and shall not be used or divulged or published to any person not being a party to this contract, without the prior written consent of the *Service Manager* or the *Employer*, which consent shall not be unreasonably withheld.
- Z11.2** If the *Contractor* is uncertain about whether any such information is confidential, it is to be regarded as such until otherwise notified by the *Service Manager*.

- Z11.3** This undertaking shall not apply to –
- Z11.3.1** Information disclosed to the employees of the *Contractor* for the purposes of the implementation of this agreement. The *Contractor* undertakes to procure that its employees are aware of the confidential nature of the information so disclosed and that they comply with the provisions of this clause;
- Z11.3.2** Information which the *Contractor* is required by law to disclose, provided that the *Contractor* notifies the *Employer* prior to disclosure so as to enable the *Employer* to take the appropriate action to protect such information. The *Contractor* may disclose such information only to the extent required by law and shall use reasonable efforts to obtain assurances that confidential treatment will be afforded to the information so disclosed;
- Z11.3.3** Information which at the time of disclosure or thereafter, without default on the part of the *Contractor*, enters the public domain or to information which was already in the possession of the *Contractor* at the time of disclosure (evidenced by written records in existence at that time);
- Z11.4** The taking of images (whether photographs, video footage or otherwise) of the *works* or any portion thereof, in the course of Providing the Works and after Completion, requires the prior written consent of the *Service Manager*. All rights in and to all such images vests exclusively in the *Employer*
- Z11.5** The *Contractor* ensures that all his Subcontractors abide by the undertakings in this clause.
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<b>Z12</b>	<b>Employer's Step-in Rights</b>
<b>Z12.1</b>	If the <i>Contractor</i> defaults by failing to comply with his obligations and fails to remedy such default within 2 weeks of the notification of the default by the <i>Service Manager</i> , the <i>Employer</i> , without prejudice to his other rights, powers and remedies under the contract, may remedy the default either himself or procure a third party (including any subcontractor or supplier of the <i>Contractor</i> ) to do so on his behalf. The reasonable costs of such remedial works shall be borne by the <i>Contractor</i>
<b>Z12.2</b>	The <i>Contractor</i> co-operates with the <i>Employer</i> and facilitates and permits the use of all required information, materials and other matter (including but not limited to documents and all other drawings, CAD materials, data, software, models, plans, designs, programs, diagrams, evaluations, materials, specifications, schedules, reports, calculations, manuals or other documents or recorded information (electronic or otherwise) which have been or are at any time prepared by or on behalf of the <i>Contractor</i> under the contract or otherwise for and/or in connection with the <i>works</i> ) and generally does all things required by the <i>Service Manager</i> to achieve this end.
<b>Z13</b>	<b>Liens and Encumbrances</b>
<b>Z13.1</b>	The <i>Contractor</i> keeps the Equipment used to Provide the Services free of all liens and other encumbrances at all times. The <i>Contractor</i> , vis-a-vis the <i>Employer</i> , waives all and any liens which he may from time to time have, or become entitled to over such Equipment and any part thereof and procures that his Subcontractors similarly, vis-a-vis the <i>Employer</i> , waive all liens they may have or become entitled to over such Equipment from time to time
<b>Z14</b>	<b>Intellectual Property</b>
<b>Z14.1</b>	Intellectual Property ("IP") rights means all rights in and to any patent, design, copyright, trade mark, trade name, trade secret or other intellectual or industrial property right relating to the Works.
<b>Z14.2</b>	IP rights remain vested in the originator and shall not be used for any reason whatsoever other than carrying out the <i>works</i> .
<b>Z14.3</b>	The <i>Contractor</i> gives the <i>Employer</i> an irrevocable, transferrable, non-exclusive, royalty free licence to use and copy all IP related to the <i>works</i> for the purposes of constructing, repairing, demolishing, operating and maintaining the works
<b>Z14.4</b>	The written approval of the <i>Contractor</i> is to be obtained before the <i>Contractor's</i> IP made available to any third party which approval will not be unreasonably withheld or delayed. Prior to making any <i>Contractor's</i> IP available to any third party the <i>Employer</i> shall obtain a written confidentiality undertaking from any such third party on terms no less onerous than the terms the <i>Employer</i> would use to protect its IP
<b>Z14.5</b>	The <i>Contractor</i> shall indemnify and hold the <i>Employer</i> harmless against and from any claim alleging an infringement of IP rights (" <b>the claim</b> "), which arises out of or in relation to:
<b>Z14.5.1</b>	the <i>Contractor's</i> design, manufacture, construction or execution of the Works
<b>Z14.5.2</b>	the use of the <i>Contractor's</i> Equipment, or
<b>Z14.5.3</b>	the proper use of the Works.
<b>Z14.6</b>	The <i>Employer</i> shall, at the request and cost of the <i>Contractor</i> , assist in contesting the claim and the <i>Contractor</i> may (at its cost) conduct negotiations for the settlement of the claim, and any litigation or arbitration which may arise from it.

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**Z15 Dispute Resolution:**


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**Z15.1 Appointment of the Adjudicator**


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An *Adjudicator* is appointed when a dispute arises, from the Panel of Adjudicators below. The referring party nominates an Adjudicator, which nomination is either accepted or rejected by the other party. In the instance of a rejection of the nominated *Adjudicator*, the referring Party refers the appointment deadlock to the Chairman of the Johannesburg Bar Council, who appoints an *Adjudicator* listed in the Panel of Adjudicators below

The Parties appoint the *Adjudicator* under the NEC3 Adjudicator's Contract, April 2013

## Panel of Adjudicators

Name	Location	Contact Details (phone & e mail)
Adv. Ghandi Badela	Gauteng	+27 11 282 3700 <a href="mailto:gandi@badela.co.za">gandi@badela.co.za</a>
Mr. Errol Tate Pr. Eng.	Durban	+27 11 262 4001 <a href="mailto:Errol.tate@mweb.co.za">Errol.tate@mweb.co.za</a>
Adv. Saleem Ebrahim	Gauteng	+27 11 535-1800 <a href="mailto:salimebrahim@mweb.co.za">salimebrahim@mweb.co.za</a>
Mr. Sebe Msutwana Pr. Eng.	Gauteng	+27 11 442 8555 <a href="mailto:sebe@civilprojects.co.za">sebe@civilprojects.co.za</a>
Mr. Sam Amod	Gauteng	<a href="mailto:sam@samamod.com">sam@samamod.com</a>
Adv. Sias Ryneke SC	Gauteng	083 653 2281 <a href="mailto:ryneke@duma.nokwe.co.za">ryneke@duma.nokwe.co.za</a>
Mr. Emeka Ogbugo (Quantity Surveyor)	Pretoria	+27 12 349 2027 <a href="mailto:emeka@gosiame.co.za">emeka@gosiame.co.za</a>

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**Z15.2 Appointment of the Arbitrator**


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An *Arbitrator* is appointed when a dispute arises from the Panel of Arbitrators below. The referring party nominates an Arbitrator, which nomination is either accepted or rejected by the other party. In the instance of a rejection of the nominated *Arbitrator*, the referring Party refers the appointment deadlock to the Chairman of the Johannesburg Bar Council, who appoints an *Arbitrator* listed in the Panel of *Arbitrators* below

Name	Location	Contact Details (phone & e mail)
Adv. Ghandi Badela	Gauteng	+27 11 282 3700 <a href="mailto:ghandi@badela.co.za">ghandi@badela.co.za</a>
Mr. Errol Tate Pr. Eng.	Durban	+27 11 262 4001 <a href="mailto:Errol.tate@mweb.co.za">Errol.tate@mweb.co.za</a>
Adv. Saleem Ebrahim	Gauteng	+27 11 535-1800 <a href="mailto:salimebrahim@mweb.co.za">salimebrahim@mweb.co.za</a>
Mr. Sebe Msutwana Pr. Eng.	Gauteng	+27 11 442 8555 <a href="mailto:sebe@civilprojects.co.za">sebe@civilprojects.co.za</a>
Mr. Sam Amod	Gauteng	<a href="mailto:sam@samamod.com">sam@samamod.com</a>
Adv. Sias Ryneke SC	Gauteng	083 653 2281 <a href="mailto:reyneke@duma.nokwe.co.za">reyneke@duma.nokwe.co.za</a>
Mr. Emeka Ogbugo (Quantity Surveyor)	Pretoria	+27 12 349 2027 <a href="mailto:emeka@gosiame.co.za">emeka@gosiame.co.za</a>

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**Z16 Notification of a Compensation Event**


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**Z16.1** Delete “eight weeks” in clause 61.3 and replace with “four weeks”. Delete the words “unless the event arises from the Service Manager or the Supervisor giving an instruction, issuing a certificate, changing an earlier decision or correcting an assumption.”

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**Z17 BBEE and Tax Clearance Certificates**


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**Z17.1** The *Contractor* shall be expected to annually present a compliant BEE Certificate, a Tax Clearance Certificate and a COID Certificate. Failure to adhere to these requirements shall be considered a material breach of the conditions of this Contract, the sanction for which may be a cancellation of this Contract.

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**Z18 Communication**


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**Z18.1** **Add a new Core Clause** 14.5 and 14.6 to read as follows:  
The *Service Manager* requires the written consent of the Employer if an action will result in a change to the design, scope, and Service information that is 5% or more

**Z18.2** The *Service Manager* requires the written consent of the Employer if an action will result in the Completion Date being extended by more than 30 days.

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**Z19 Delegation**


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As stipulated by Section 37(2) of the Occupational Health and Safety Act No. 85 of 1993 as amended the *Contractor* agrees to the following:

**Z19.1** As part of this contract the *Contractor* acknowledge that it (mandatory) is an employer in its own right with duties as prescribed in the Occupational Health and Safety Act No 85 of 1993 as amended and agree to ensure that all work being performed, or Equipment, Plant and Materials being used, are in accordance with the provisions of the said Act, and in particular with regard to the Construction Regulations.

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**PART C1.2b CONTRACT DATA**

**PART TWO – DATA PROVIDED BY THE *SERVICE PROVIDER***

Clause	Statement	Data
10.1	The Contractor is (Name): Address:  Telephone No. Fax No.	
11.2	The <i>working areas</i> are	See C3 'Service Information'
24.1	The <i>Contractor's Key people</i> are:	<b>CV's to be appended to Tender Schedule</b>
	Name:	
	Job:	
	Responsibility:	
	Qualifications:	
	Experience:	
	Name:	
	Job:	
	Responsibility:	
	Qualifications:	
	Experience:	
	Name:	
	Job:	
	Responsibility:	
	Qualifications:	
	Experience:	

Name:

Job:

Responsibility:

Qualifications:

Experience:

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11.2 The following matters will be included in the Risk Register

- Theft
  - High Speed Winds
  - Working at Heights
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**PART C1: AGREEMENTS AND CONTRACT DATA**

**C1.3: OCCUPATIONAL HEALTH AND SAFETY AGREEMENT**

**OCCUPATIONAL HEALTH AND SAFETY AGREEMENT**

**AGREEMENT IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH & SAFETY ACT (ACT 85 Of 1993) & CONSTRUCTION REGULATION 5.1(k)**

**OBJECTIVES**

To assist Airports Company South Africa (ACSA) to comply with the requirements of:

1. The Occupational Health & Safety (Act 85 of 1993) and its regulations and
2. The Compensation for Occupational Injuries & Diseases Act (Act 130 of 1993) also known as the (COID Act).

**To this end an Agreement must be concluded before any contractor / subcontracted work may commence**

**The parties to this Agreement are:**

<b>Name of Organisation:</b> <b>AIRPORTS COMPANY SOUTH AFRICA, Cape Town International Airport</b>
<b>Physical Address:</b> <b>Cape Town International Airport</b> <b>Airport Road</b> <b>Matroosfontein</b> <b>Cape Town</b> <b>7490</b>

**Hereinafter referred to as “Client”**

<b>Name of Organisation:</b>
<b>Physical Address:</b>

**Hereinafter referred to as “the Mandatory/Principal Contractor”**  
**MANDATORY’S MAIN SCOPE OF WORK**

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<b>GENERAL INFORMATION FORMING PART OF THIS AGREEMENT</b>
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1. The Occupational Health & Safety Act comprises of SECTION 1-50 and all un-repealed REGULATIONS promulgated in terms of the former Machinery and Occupational Safety Act No.6 of 1983 as amended as well as other REGULATIONS which may be promulgated in terms of the Act and other relevant Acts pertaining to the job in hand.
2. "Mandatory" is defined as including as agent, a principal contractor or a contractor for work, but WITHOUT DEROGATING FROM HIS/HER STATUS IN HIS/HER RIGHT AS AN EMPLOYER or user of the plant.
3. Section 37 of the Occupational Health & Safety Act potentially punishes Employers (PRINCIPAL CONTRACTOR) for unlawful acts or omissions of Mandataries (CONTRACTORS) save where a Written Agreement between the parties has been concluded containing arrangements and procedures to ensure compliance with the said Act BY THE MANDATARY.
4. All documents attached or refer to in the above Agreement form an integral part of the Agreement.
5. To perform in terms of this agreement Mandataries must be familiar and conversant with the relevant provisions of the Occupational Health & Safety Act 85 of 1993 (OHS Act) and applicable Regulations.
6. Mandatories who utilise the services of their own Mandataries (contractors) must conclude a similar Written Agreement with them.
7. Be advised that this Agreement places the onus on the Mandatory to contact the CLIENT in the event of inability to perform as per this Agreement.
8. This Agreement shall be binding for all work the Mandatory undertakes for the client.
9. All documentation according to the Safety checklist including a copy of the written Construction Manager appointment in terms of construction regulation 8, must be submitted 7 days before work commences.

<b>THE UNDERTAKING</b>
------------------------

The Mandatory undertakes to comply with:

### **INSURANCE**

1. The Mandatory warrants that all their employees and/or their contractor's employees if any are covered in terms of the COID Act, which shall remain in force whilst any such employees are present on the Client's premises. A letter is required prior commencing any work on site confirming that the Principal contractor or contractor is in good standing with the Compensation Fund or Licensed Insurer.
2. The Mandatory warrants that they are in possession of the following insurance cover, which cover shall remain in force whilst they and /or their employees are present on the Client's premises, or which shall remain in force for that duration of their contractual relationship with the Client, whichever period is the longest.
  - a. Public Liability Insurance Cover as required by the Subcontract Agreement.
  - b. Any other Insurance cover that will adequately makes provision for any possible losses and/or claims arising from their and /or their Subcontractors and/or their respective employee's acts and/or omissions on the Client's premises.

<b>COMPLIANCE WITH THE OCCUPATIONAL HEALTH &amp; SAFETY ACT 85 OF 1993</b>
--

The Mandatory undertakes to ensure that they and/or their subcontractors if any and/or their respective employees will at all times comply with the following conditions:

1. All work performed by the Mandatary on the Client's premises must be performed under the close supervision of the Mandatary's employees who are to be trained to understand the hazards associated with any work that the Mandatary performs on the Client's premises.
2. The Mandatary shall be assigned the responsibility in terms of Section 16(1) of the OHS Act 85 of 1993, if the Mandatary assigns any duty in terms of Section 16(2), a copy of such written assignment shall immediately be forwarded to the Client.
3. The Mandatary shall ensure that he/she familiarise himself/herself with the requirements of the OHS Act 85 of 1993 and that s/he and his/her employees and any of his subcontractors comply with the requirements.
4. The Mandatary shall ensure that a baseline risk assessment is performed by a competent person before commencement of any work in the Client's premises. A baseline risk assessment document will include identification of hazards and risk, analysis and evaluation of the risks and hazards identified, a documented plan and safe work procedures to mitigate, reduce or control the risks identified, and a monitoring and review plan of the risks and hazards.
5. The Mandatary shall appoint competent persons who shall be trained on any Occupational Health & Safety aspect pertaining to them or to the work that is to be performed.
6. The Mandatary shall ensure that discipline regarding Occupational Health & Safety shall be strictly enforced.
7. Any personal protective equipment required shall be issued by the Mandatary to his/her employees and shall be worn at all times.
8. Written safe working practices/procedures and precautionary measures shall be made available and enforced and all employees shall be made conversant with the contents of these practises.
9. No unsafe equipment/machinery and/or articles shall be used by the Mandatary or contractor on the Client's premises.
10. All incidents/accidents referred to in OHS Act shall be reported by the Mandatary to the Provincial Director: Department of Labour as well as to the Client.
11. No user shall be made by the Mandatary and/or their employees and or their subcontractors of any of the Client's machinery/article/substance/plant/personal protective equipment without prior written approval.
12. The Mandatary shall ensure that work for which the issuing of permit is required shall not be performed prior to the obtaining of a duty completed approved permit.
13. The Mandatary shall ensure that no alcohol or any other intoxicating substance shall be allowed on the Client's premises. Anyone suspected to be under the influence of alcohol or any other intoxicating substance shall not be allowed on the premises. Anyone found on the premises suspected to be under the influence of alcohol or any other intoxicating substance shall be escorted off the said premises immediately.
14. Full participation by the Mandatary shall be given to the employees of the Client if and when they inquire into Occupational Health & Safety.

**FURTHER UNDERTAKING**

1. Only a duly authorised representative appointed in terms of Section 16.2 of the OHS Act is eligible to sign this agreement on behalf of the Mandatary. The signing power of this representative must be designated in writing by the Chief Executive Officer of the Mandatary. A copy of this letter must be made available to the Client.
2. The Mandatary confirms that he has been informed that he must report to the Client’s management, in writing anything he/she deems to be unhealthy and /or unsafe. He has versed his employees in this regard.
3. The Mandatary warrants that he/she shall not endanger the health & safety of the Client’s employees and other persons in any way whilst performing work on the Client’s premises.
4. The Mandatary understands that no work may commence on the Client’s premises until this procedure is duly completed, signed and received by the Client.
5. Non-compliance with any of the above clauses may lead to an immediate cancellation of the contract.

**ACCEPTANCE BY MANDATARY**

In terms of section 37(2) of the Occupational Health & Safety Act 85 of 1993 and section 5.1(k) of the Construction Regulations 2014,

I .....a duly authorised 16.2 Appointee acting for and on behalf of .....(company name) undertake to ensure that the requirements and the provision of the OHSAct 85 of 1993 and its regulations are complied with.

Mandatary – WCA/ Federated Employers Mutual No.....

Expiry date .....

\_\_\_\_\_  
**NAME AND SIGNATURE ON BEHALF OF MANDATARY**  
(Warrant his authority to sign)

\_\_\_\_\_  
**DATE**

\_\_\_\_\_  
**NAME AND SIGNATURE ON BEHALF OF THE CLIENT**  
**AIRPORT COMPANY SOUTH AFRICA**

\_\_\_\_\_  
**DATE**

## PART C1: AGREEMENTS AND CONTRACT DATA

### C1.4: ACSA Insurance Schedule

#### Part 1:

Notes to Schedule:

- The provision of insurance by the *Employer* does not limit the obligations, liabilities or responsibilities of the *Contractor* under this contract in any way whatsoever (including but not limited to any requirement for the provision by the *Contractor* of any other insurances).
- Unless specifically otherwise stated, capitalised terms in this schedule (other than *Employer*, *Contractor* and *works* where written in italics) have the meaning assigned to them in the relevant policy of insurance.
- This Insurance Schedule is a generic term sheet generally applicable to the *Employer's* projects. In the circumstances:
  - If this Insurance Schedule reflects the amount of any cover provided by the *Employer* to be higher than the amount required in the Contract Data, the *Employer's* obligation under this Contract is limited to the lower amount; and
  - If this Insurance Schedule provides for any cover which is not stated to be provided by the *Employer* in the Contract Data, the *Employer's* obligation under this Contract is limited to the cover stated in the Contract Data.
- [The terms governing the Employer provided policies of insurance are the terms detailed in the policies themselves. This schedule is merely a summary of the key terms. It is the responsibility of the tenderer to obtain copies of the policies and satisfy itself of the actual terms as required by the tenderer.]

#### Part 2:

#### **ACSA Maintenance Contracts Insurance Clause. Insurance Affected by the Employer.**

Notwithstanding anything elsewhere contained in the Contract and without limiting the obligations, liabilities or responsibilities of the Contractor in any way whatsoever (including but not limited to any requirement for the provision by the Contractor of any other insurances) the Employer shall effect and maintain as appropriate in the joint names of the Employer , Contractors and Sub-Contractors, Consultants and Sub-Consultants the following insurances which are subject to the terms, limits, exceptions and conditions of the Policy:

- (a) **PUBLIC LIABILITY Insurance** – which will provide indemnity against the insured parties legal liability in the event of accidental death of or injury to third party persons and/or accidental loss of or damage to third party property arising directly from the execution of the contract with a limit of indemnity of R **100 million** in respect of all claims arising from any one occurrence or series of occurrences consequent on or attributable to one source or original cause. The policy will be subject to a Deductible of **R25 000** for Property Damage claims only but **R250 000** where Loss or Damage involves Aircraft.
  - (i) The Employer shall pay any premium due in connection with the insurance affected by the Employer.
  - (ii) The Contractor shall not include any premium charges for this insurance except to the extent that he may deem necessary in his own interests to effect supplementary insurance to the insurance effected by the Employer. The Employer reserves the right to call for full information regarding insurance costs included by the Contractor.
  - (iii) Any further clarification of the scope of cover provided by the Policies arranged by the Employer should be obtained from the Employer.

- (iv) In the event of any occurrence which is likely to or could give rise to a claim under the insurances arranged by the Employer the Contractor shall:
  - (A) in addition to any statutory requirement or other requirements contained in the Contract immediately notify the Employer's Insurance Broker or the Insurers by telephone or telefax giving the circumstances nature and an estimate of the loss or damage or liability
  - (B) complete a Claims Advice Form available from the Insurance Brokers to whom the form must be returned without delay.
  - (C) negotiate the settlement of claims with the Insurers through the Employer's Insurance Brokers and shall when required to do so obtain the Employer's approval of such settlement.

The Employer and Insurers shall have the right to make all and any enquiries to the site of the Works or elsewhere as to the cause and results of any such occurrence and the Contractor shall co-operate in the carrying out of such enquiries.

- (v) The Contractor will be liable for the amount of the Deductible (First Amount Payable in respect of any claim made by or against the Contractor or Sub-Contractors under the insurances effected by the Employer. Where more than one Contractor is involved in the same claim the Deductible will be borne in pro-rata amounts by each Contractor in proportion to the extent of each Contractor's admitted claim.
- (vi) Any amount which becomes payable to the Contractor or any of his Sub-Contractors as a result of a claim under the Contact Works Insurance shall if required by the Employer be paid net of the Deductible to the Employer who shall pay the Contractor from the proceeds of such payment upon rectification repair or reinstatement of the loss or damage but this provision shall not in any way affect the Contractor's obligations liabilities or responsibilities in terms of the Contract.

In respect of any amount which becomes payable as a result of a claim under any Public Liability Insurance the Contractor or his Sub-Contractors shall be required to pay the amount of the Deductible to the Insurer to facilitate settlement of such claim.

**Insurance Affected by the Contractor.**

Without in any way detracting from any requirements contained elsewhere in this contract the Contractor and Sub-Contractors shall where applicable, provide as a minimum the following:

- (a) INSURANCE OF CONTRACTORS EQUIPMENT (including tools offices and other temporary structures and contents) and other things (except those intended for incorporation into the Works) brought onto the Site for a sum sufficient to provide for their replacement.
- (b) Insurance in terms of the provisions of the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 as may be amended or in terms of any similar Workers Compensation and Unemployment Insurance enactment's in the Suppliers' or Sub Supplier's operational, manufacturing or assembly locations.
- (c) Motor Vehicle Liability Insurance comprising (as a minimum) "Balance of Third Party" Risks including Passenger Liability indemnity.

(d) Public Liability Insurance for an amount sufficient to cover the Contractors obligations in terms of the Deductible of **R25 000** or **R250 000** as stated above.

- (i) The insurances to be provided by the Contractor and his Sub-Contractors shall:
  - (A) be effected with Insurers and on terms approved by the Employer.
  - (B) be maintained in force for whatever period the perils to be insured by the Contractor are at risk (including any defects liability period during which the Contractor is responsible for the care of the Works)
  - (C) submit to the Employer the relevant Policy or Policies of Insurance or evidence acceptable to the Employer that such insurances have been effected.
- (ii) In the event that the Contractor or his Sub-Contractor receives any notice of cancellation or restrictive modification to the insurance provided to them they shall immediately notify the Employer in writing of such cancellation or restriction and shall advise what action the Contractor or his Sub-Contractor will take to remedy such action.

If the Contractor fails to effect and keep in force the insurances referred to then the Employer may effect and keep in force any such insurances and pay such premium or premiums as may be necessary for that purpose and from time to time deduct the amount paid by the Employer from any monies due or which may become due to the Contractor or recover same as a debt from the Contractor.

#### **Sub-Contractors**

The Contractor shall:

- (a) ensure that all potential and appointed Sub-Contractors are aware of the whole contents of this clause, and
- (b) enforce the compliance by Sub-Contractors with this clause where applicable.”

**PART C1: AGREEMENTS AND CONTRACT DATA****C1.5: ENVIRONMENTAL TERMS AND CONDITIONS TO COMMENCE WORK****- EMS 048**

The following Environmental Terms and Conditions shall be strictly adhered to by all contractors when conducting works for ACSA. ACSA shall audit contractor activities, products and services on an ad hoc basis to ensure compliance to these environmental conditions. Any pollution clean-up costs shall be borne by the contractor.

ISSUE	REQUIREMENT
Environmental Policy	ACSA's Environmental Policy shall be communicated, comprehended and implemented by all ACSA appointed contractor staff.
Storm water, Soil and Groundwater Pollution	No solid or liquid material may be permitted to contaminate or potentially contaminate storm water, soil or groundwater resources. Any pollution that risks contamination of these resources must be cleaned-up immediately. Spills must be reported to ACSA immediately. Contractors shall supply their own suitable clean-up materials where required. Washing, maintenance and refuelling of equipment shall only be allowed in designated service areas on ACSA property. It is the contractor's responsibility to determine the location of these areas. No leaking equipment or vehicles shall be permitted on the airport premises.
Air Pollution	Dust: Dust resulting from work activities that could cause a nuisance to employees or the public shall be kept to a minimum. Odours and emissions: All practical measures shall be taken to reduce unpleasant odours and emissions generated from work related activities. Fires: No open fires shall be permitted on site.
Noise Pollution	All reasonable measures shall be taken to minimize noise generated on site as a result of work operations. The Contractor shall comply with the applicable regulations with regard to noise.
Waste Management	Waste shall be separated as general or hazardous waste. General and hazardous waste shall be disposed of appropriately at a permitted landfill site should recycling or re-use of waste not be feasible. Under no circumstances shall solid or liquid waste be dumped, buried or burnt. Contractors shall maintain a tidy, litter free environment at all times in their work area. Contractors must keep on file: The name of the contracting waste company Waste disposal site used Monthly reports on quantities – separated into general, hazardous and recycled Maintained file of all Waste Manifest Documents and Certificates of Safe Disposal Copy of waste permit for disposal site This information must be available during audits and inspections.
Handling & Storage of Hazardous Chemical Substances (HCS)	All HCS shall be clearly labelled, stored and handled in accordance to Materials Safety Data Sheets. Materials Safety Data Sheets shall be stored with all HCS. All spillages of HCS must be cleaned-up immediately and disposed of as hazardous waste. (HCS spillages must be reported to ACSA immediately). All contractors shall be adequately informed with regards to the handling and storage of hazardous substances. Contractors shall comply with all relevant national, regional and local legislation with regard to the transport, storage, use and disposal of hazardous substances.
Water and Energy Consumption	ACSA promotes the conservation of water and energy resources. The contractor shall identify and manage those work activities that may result in water and energy wastage.
Training & Awareness	The conditions outlined in this permit shall be communicated to all contractors and their employees prior to commencing works at the airport.

**Penalties**

Penalties shall be imposed by ACSA on Contractors who are found to be infringing these requirements and/or legislation. The Contractor shall be advised in writing of the nature of the infringement and the amount of the penalty. The Contractor shall take the necessary steps (e.g. training/remediation) to prevent a recurrence of the infringement and shall advise ACSA accordingly.

The Contractor is also advised that the imposition of penalties does not replace any legal proceedings, the Council, authorities, land owners and/or members of the public may institute against the Contractor. Penalties shall be between R200 and R20 000, depending upon the severity of the infringement.

The decision on how much to impose will be made by ACSA's Airport Environmental Management Representative in consultation with the Airport Manager or his/her designate, and will be final. In addition to the penalty, the Contractor shall be required to make good any damage caused as a result of the infringement at his/her own expense.

I, \_\_\_\_\_ (name & surname) of \_\_\_\_\_

\_\_\_\_\_ (company) agree to the above conditions and acknowledge

ACSA's right to impose penalties should I or any of my employees or sub-contractors fail to comply with these conditions.

Signed: \_\_\_\_\_ on this date: \_\_\_\_\_ (dd/mm/yyyy)

## PART C2: PRICING DATA

### C2.1 Pricing Assumptions

The intended pricing strategy to be followed in this tender is according to the Price List (including the activity schedule).

The Contract Data, service information, drawings and any other documents relevant to this tender must be read in conjunction with the Activity Schedule.

The *Contractor* must plan the work in this contract as a set of activities. These should be the same activities as he shows on his programme (Plan for the service).

This schedule covers the items that will be measurable. A lump sum price for each activity shall be entered and no other items will be measured. Costs not covered by the items may be included in the most appropriate items listed. The *Contractor* has the liberty to insert items, quantities and rates of his own choosing in the said schedule as a separate line item.

The pricing schedule as completed by the *Contractor* shall be VAT exclusive prices and shall cover, "inter alia" all general risks, liabilities, obligations, profit, expenses, costs, bonuses, all allowances such as shift and standby allowances, sick-leave, other leave, brackets, fixings, incidentals, consumables etc. that will be required to successfully complete this contract as set forth or as implied in the documents on which this contract is based.

The *Contractor* is to take note that payment is made for each activity only when it is complete. "Complete" as it is used in this schedule means the complete system or unit as specified in the particular document.

Unless a separate rate for the supply and for the installation of any item is specifically called for, the supply and installation costs of any item shall be fully included in the price.

The description of each item shall, unless otherwise stated herein, be held to include making, conveying and delivering, unloading, storing, unpacking, hoisting, setting, fitting and fixing in position, cutting and waste, patterns, models and templates, plant, temporary works, return of packaging, establishment charges, profit and all other obligations arising out of the contractual conditions.

The quantities and rates included for day work shall form part of the tender price, but Contractors shall note that this item must be regarded as provisional and will only be payable to the *Contractor* if and when a written order to this effect has been issued.

"Foreign" shall mean the CIF (Cost, Insurance and Freight) value.

No alterations to the original text shall be allowed. If any alterations are made, it shall be ignored and the original wording will apply.

Variations in the scope and extent of the work shall be allowed to meet the Service Manager's requirements and shall be measured and priced at the rates entered in the Activity Schedule, where appropriate, and shall form an addition to or deduction from the total of the Accepted Contract Amount. Any items or variations for which rates have not been included in the Activity Schedule shall be agreed and priced as non-scheduled items (Part 2 below).

All provisional sums and contingency amounts shall be expended as directed by the Employer and any balance remaining shall be deducted from the contract sum.

All items described as "provisional" shall be measured as executed and paid for according to prices in the activity schedule and any amounts not spent shall be deducted from the contract price. No work for which "provisional" items are provided shall, commence without a written instruction from the Employer.

No commitment to expending any portion of the contingency amounts and /or provisional sums are made or implied by the Employer.

The Contractor shall not be entitled to any claim in instances where provisional sums are partially or in total removed from the contract.

The main cost drivers for this contract are the required labour, maintenance intervals as set out by the IEC standards for Solar Plants and Manufacturers OEM recommendation. Spare part costs for major maintenance service will also form part of the cost drivers.

## C2.2 The Price List

The following Activity Schedule will constitute part of the contract for the operation and maintenance of the Solar Plant. These activities should be read in conjunction with the detailed maintenance activities listed in Annexure B as well as all applicable standards and specifications for solar plant maintenance. The Contractor should use best practice in the maintenance of Solar Plants to price the activities below, considering all the activities that are required to execute adequate and OEM compliant maintenance, without compromising the integrity, warranties and guarantees of the Solar Plant equipment.

### Part 1: Activity Schedule

Item	Activity Description	Frequency	Quantity (per year)	Amount (per frequency)	Total (per year)
1	Module Inspection and Cleaning	Every 2 months	6		
2	Module Connection Integrity	Every 2 months	6		
3	Junction/String Combiner Box	Every 3 months	4		
4	Hot Spots/Infrared Scanning	Annually	1		
5	Inverter Servicing	As per OEM Requirements	1		
6	Structural Integrity	Every 3 months	4		
7	Balance of Plant	Monthly	12		
8	MV Switch Gear and Transformer Maintenance	Annual	1		
9	Earthing Integrity	Every 3 months	4		
10	LV Cabling Integrity	Annually	1		
11	Meteorological Stations and Monitoring Systems	Annually	1		
12	I-V Curve Measurement	Twice a year	2		
13	OEM Monitoring Software License	Annually	1		
14	Training of ACSA Personnel	Every 3 Months	4		
15	Vegetation Management	Twice a year	2		
16	Reporting	Monthly	12		
17	Preliminaries and General	Annual	1		
	Sub-total A (per year) excluding VAT				R

\* Travelling time charges or allowances will not be paid separately and where applicable must be included in the rates above.

\* A Parking access card will be applied for and issued in order to facilitate access through the entrance and exit booms. This card is payable in cash at the start of each calendar month – at the Parking Office. This card shall only be utilised for the purpose of performing duties under this SLA. Any abuse of the use of this card for personal use shall be penalised at R500.00 per occurrence.

It is important to note that not all amounts above are payable in any one month. Since this is an activity schedule only the activities performed and completed shall be claimed for at invoice date and paid for accordingly.

**Labour Rates and Mark-up**

Any work not included under Part 1 above shall be deemed additional work or non-scheduled items and will be charged at the following rates:

**Labour**

Item	Description	Normal hours (Including Saturdays) (R/hour)	After hours (R/hour)	Sunday (R/hour)
1	Labourers			
2	Semi-skilled			
3	Artisan - Electrical			
4	Artisan – Civil/Structural			
5	Artisan - Mechanical			
6	Electrical Technician			
7	Electrical Engineer			
8	Site Manager			

All rates to exclude VAT. Subject to mutual agreement between the *Employer* and the *Contractor*, the number of staff allocated to the contract may be increased/decreased to cater for special needs that may arise from time to time. Labour rates shall include all personnel insurance, holidays with pay, incentive bonuses. No labour shall be charged for travel or travelling. Labour time shall be calculated for the time spent on site only.

**Part 2: Additional Work / Non-Scheduled Items**

The Contractor must provide descriptions of the employees involved on this contract based on his submitted Resource Proposal.

Description	Quantity per Individual	Rate (R/hour)	Total / year
Labourers	1		
Semi-skilled	1		
Artisan - Electrician	1		
Artisan - Civil	1		
Artisan - Mechanical	1		
Electrical Technician	1		
Site Manager	1		
Labour Subtotal B (per year) Excluding VAT		R	

Call out rates must include all required travelling and the first hour on site.

Note: Call outs are not chargeable during hours of Scheduled maintenance, where the *Contractor* is already on site

**Mark-up (third party procured items/services)**

Cost	Mark-up
R 0 – R 2 000	10%
R2001-R10 000	8%

R 10 001-R50 0000	6%
Over R R50 0000	5%

Cost shall be net cost (excluding VAT) of parts delivered to site with all discounts deducted. Original Tax Invoices from the service providers to be submitted with the *Contractor's* invoice.

The total 5 year period is broken up as follows

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
<b>Escalation</b>		CPI (6%)	CPI (6%)	CPI (6%)	CPI (6%)	
<b>Total Value</b>						
<b>Monthly Expenses</b>						

### Part 3: Spares List

The spare list has to be prepared on the basis of tenderers best current spares prices (excl. VAT). The actual costs of spares will be reimbursed on submission of invoices and suppliers supporting documents. All verified invoices will be paid including the agreed mark-up percentages.

10% of the construction value shall be allowed for in the spares cost inserted as a line item in the bill of quantities. All verified invoices will be paid including the mark-up percentages stipulated. The contractor must provide as part of the maintenance manual, a list of spare parts.

### Contract Value

The guide below must be used in estimating the contract value. This amount must be reported as the Contract Value in the corresponding schedules. Tenderers are reminded that this amount is for illustrative purposes only and that ACSA will not be under any obligation to expend the full or any portion of this amount. Monthly contract expenditure will be strictly calculated according to the Activity Schedule as provided above.

### Solar Maintenance Five Year Maintenance Expenditure

Description	Total (excluding VAT)
Part 1: Preventative Maintenance Sub-total A	
Part 2: Additional Work Sub-total B	
Part 3: Spares Cost Sub-total C <b>(10% of Construction value to be used)</b>	
SUM (A+B+C)	
(Estimated Contract Value)	

### Solar Maintenance Expenditure for Five Years

Description	Total (excluding VAT)
Year 1	
Year 2 (year 1 plus CPI escalation)	
Year 3 (year 2 plus CPI escalation)	
Year 4 (year 3 plus CPI escalation)	
Year 5 (year 4 plus CPI escalation)	
5 year estimated contract value Final Total	

\*this amount to be carried over to Form of Offer and Acceptance

Contract values will be increased/decreased according to the CPI. 6% CPI price escalation per annum should be used for illustrative and comparison purposes.



**AIRPORTS COMPANY**  
SOUTH AFRICA

### **PART 3: SERVICE INFORMATION**

<b>Document reference</b>	<b>Title</b>	<b>No of pages</b>
C3.1	This cover page <i>Employer's Service Information</i>	1
	Total number of pages	

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## 1 Description of the Service

### 1.1 Executive Overview

The objective is to operate and maintain the serviceability of the Solar Plant as guided by the OHS Act and applicable standards and codes of practice for PV plants, at Cape Town International Airport in a sustainable manner within operating and maintenance (O&M) cost parameters, while ensuring compliance to general safety, aviation legislation, BS, IEC (62446, 60364-6), NRS & SANS. The contractor shall be responsible for the maintenance and performance of the plant as well as the training of ACSA staff to take over the responsibility after the O&M stage. The location of the Property where the Solar Plant will be installed is detailed in Annexure A as part of C4 (Site Information).

### 1.2 Employer's Requirements for the Service

The *Contractor* will be fully responsible for the all-inclusive operations and maintenance (preventive, corrective, and spare parts replacement) and performance monitoring activities of the solar plant facility during the five (5) years of operation.

For each equipment that makes up the PV Solar Plant, all work will be carried out to standards as required by the Aviation regulation and safety standards as well as any applicable governing law and/or regulations. Where standards differ from those required by this document the more stringent requirement shall apply. The *Contractor* will be fully responsible for obtaining (and keeping up to date with) said requirements.

The *Contractor's* main objective is to ensure that all equipment is effectively maintained and operating within all the relevant safety and quality compliances in order to ensure reliability of electrical supply needed for airport operations. It is essential that preventative maintenance is administered at the appropriate intervals to achieve this objective.

The Contractor shall perform operating and maintenance activities together with the Employer's personnel, where the Employer personnel will be continuously trained during the O&M period along with all required material in hard copy and in electronic copy.

The Contractor shall form part of the Employers regular maintenance planning practices and this requires, amongst others, that all operating and maintenance activity planning and decision making processes to be done in combination with the Employer's supervision and with the Employer's approval.

The Contractor shall operate and maintain the PV Plant (including the complete solar PV Plant, the PV Plant MV stations/cabins enclosing the inverter, transformer and switchgear, power evacuation cabling, and the support facilities), in good condition and perform the agreed O&M services in good faith, in accordance with the best industry practice and as per guiding principles indicated in IEC 62446-2 for preventive and corrective maintenance

The Contractor shall perform periodic inspection and testing of the PV plant and report on the status of modules, cabling, structures, inverters, transformers, security system, monitoring system, power evacuation lines, surveillance and control system, communications, security, and meteorological stations.

The Contractor shall repair any defect or replace any item, equipment, component and shall guarantee at all times the on-site availability of minimum spare parts.

The Contractor shall supply all required tools, equipment, and facilities (including water for PV module cleaning) which are necessary for carrying out the operation and maintenance of the PV plant.

The Contractor shall protect any plant warranties and support the Employer on negotiation of any warranty or the claims available to Employer for material or equipment supply and for the performance work associated with the plant.

The Contractor shall respond in the shortest possible time to any alarm generated in PV plant and take the necessary actions (repair or replacement) and shall report to the Employer.

The Contractor shall co-operate and co-ordinate with the Service Manager in the best way to ensure the operation and maintenance activities are performed respecting all Employer's requirements.

The Contractor shall report periodically regarding the status of the plant, maintenance work and the performance evaluation of the plant according to the reporting schedule defined in the Pricing Schedule of this document.

The Contractor warrants the absence of defects on any repair, replacement and generally on any activities of maintenance for two years in case of replacement or repair.

The Contractor will be allowed to utilise the Employer's storage space as agreed with the Employer. The Contractor to provide his spares storage requirements to the Employer 3 months prior to the commencement of the O&M Contract for review and agreement. The Contractor to make provision for temporary storage facilities should there be a shortfall between the Contractor's storage requirements and the Employer's available space.

The Scheduled Maintenance activities are detailed in Annex B as part of C4 (Site Information).

### 1.3 Interpretation and Terminology

The following abbreviations are used in this Service Information:

Abbreviation	Meaning given to the abbreviation
ACSA	Airport Company South Africa
AC	Alternating Current, is an electric current in which the flow of electric charge periodically reverses direction
AIP	Aeronautical Information Publication
ARFF	Aircraft Rescue and Fire Fighting
AVSEC	Aviation Security
CMMS	Computerised Maintenance Management System (Oracle EAM software platform)
CTIA	Cape Town International Airport
DC	Direct Current, the flow of electric charge is only in one direction
ICAO	International Civil Aviation Organization
IEC	International Electro Technical Commission
LV	Low Voltage = < 1 000V
MV	Medium Voltage Ranging from 1 000V to 11 000V
ME	Maintenance Engineering Department
OEM	Original Equipment Manufacturer
O&M	Operation and Maintenance - of the Solar Plant
ORHVS	Operational Regulations for High Voltage Systems

PM	Preventative & Predictive Maintenance Work Orders
Plant or PV Plant	Embedded Photovoltaic Solar Power Plant
PV	Photovoltaic
SANS	South African National Standards
SCADA	Supervisory control and data acquisition, is a system for remote monitoring and control that operates with coded signals over communication channels.
SOP	Standard Operating Procedure
OHS Act	Occupational Health and Safety Act
WO	Corrective & Dispatched Work Orders

## 2 Management Strategy and Start Up

### 2.1 The Contractor's Plan for the Service

Prior to the activation of this contract, the contractor must submit his plan (contractor's plan for the intended services) for approval by the employer, which should provide a matrix detailing the following:

All the various infrastructure (PV Panels, Cables, Inverters, MV Circuitry, LV circuitry, etcetera) must be referenced against the five-year time-axis to indicate the interval at which the service activity (daily, weekly, bi-monthly, monthly, 6 monthly, 12 monthly) will be performed.

The plan must also aim to schedule the activities with reference to the contractor's available manpower with the airport's operational hours which is detailed below. The importance is to find the balance between when to maintain the infrastructure without impeding too much on the electricity generating ability of the plant. Preferably most maintenance must be performed during night hours.

- The airport's operational hours are detailed as follows:
  - Monday to Sunday      05H00 to      23H00

The airport's operational hours are published in the AIP for CTIA and can change based on operational requirements from time to time.

The submitted Contractor's Plan will form part of Annex C to C4 (Site Information) and shall be referenced against the EOM recommendations of the newly installed PV Plant as well as the submission which was made for operation and maintenance, with the tender award.

Together with the submitted plan, the *Contractor* shall provide a Schedule of equipment and tool, which will be used on this contract. The list will form part of the tender return schedules. The equipment will be judged in conjunction with the *Contractor's* Plan for the service to understand whether or not the bidder has fully understood his obligations and whether he is able to do the work

The submitted Contractor's Schedule of equipment and tools will be attached as Annex D to C4 (Site Information).

### 2.2 Management Meetings

Contract performance meetings will be set up from time to time between the Contractor and the Employer's Service Manager. The scheduling of these meetings will be at the discretion of Cape Town International Airport as and when required. The meetings will be conducted formally where contract KPI's will be discussed. The Contractor needs to ensure the availability of the representative with a delegated authority to attend these meetings. The meeting minutes will be recorded and distributed to the contractor electronically for record keeping and actioning of the agreed activities.

Regular meetings of a general nature may be convened and chaired by the *Service Manager* as follows:

Title and Purpose	Approximate Time & Interval	Location	Attendance by:
Overall contract progress and feedback, Risk register and compensation events	To be agreed on	Cape Town International Airport – ACSA Offices	<i>Employer, Contractor and others, as and when required</i>

Meetings of a specialist nature may be convened as specified elsewhere in this Service Information or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress

of the *service*. Records of these meetings shall be submitted to the *Service Manager* by the person convening the meeting within five days of the meeting.

All meetings shall be recorded using minutes or a register prepared and circulated by the person who convened the meeting. Such minutes or register shall not be used for the purpose of confirming actions or instructions under the contract as these shall be done separately by the person identified in the *conditions of contract* to carry out such actions or instructions.

### 2.3 Contractor's Management, Supervision and Key People

The *Contractor* shall submit an organogram (as part of the Returnable Schedules) showing his people and their lines of authority / communication. This is specifically essential if the contractor is a Joint Venture. The submitted Contractor's Organogram will be attached as an Annexure.

In addition, the *Contractor* shall submit a Resource Proposal for approval which will indicate the intended personnel which will be allocated to perform duties under this contract. This Resource Proposal must be submitted as part of the Returnable Schedules. The submitted Contractor's Resource Proposal will be attached as Annex F of C4 (Site Information). This will, as a minimum, include all persons from the Contract Manager level to the Semi-skilled labourers. For the full duration of this contract, none of these persons will be replaced by a person of lesser ability or qualification. In the event of a person being replaced the Contractor must inform the *Service Manager* prior to the replacement and also submit an amended Resource Proposal accordingly.

All instructions and authorisations on this contract will come from the client's Service Manager or his defined representative.

Whilst the contractor (all staff and sub-contractors) is active within the contract's physical boundaries and time-frames, all their representatives will adhere to the following:

1. Wear a clearly marked (company name and type of services, i.e., electrical contractor) reflector jacket or vest.
2. Comply with all ACSA safety and Environmental procedures.
3. Comply with all ACSA AVSEC and ARFF procedures.
4. Behave in a professional and lawful manner.
5. Be courteous to all ACSA customers and stakeholders.

### 2.4 Documentation Control

These contract deliverables will interact extensively with ACSA's CMMS system, which will produce scheduled PM and WO (documentation) that must be completed within the agreed timeframes. The work orders will have unique reference numbers. All additional specific / specialized inspection and maintenance sheets must be attached to the appropriate work order and submitted to the ACSA CMMS coordinator.

Monthly progress reports should be submitted timeously by no later than the 3rd day of the following month, where reference must be made of all completed PM's and WO's. The monthly report must have the following minimum information & sections defined in Annex G - SLA Monthly Service Report Template.

When invoicing, the *Contractor* shall ensure that all required reports for the corresponding month are attached to the monthly invoice. This will include monthly reports on:

1. System availability (averaged per week)
2. System performance testing
3. Maintenance work (including % of scheduled maintenance work completed)
4. Daily checks performed
5. Maintenance plan for the next month
6. The latest spares inventory
7. Asset register up to date including equipment data
8. Outstanding maintenance issues

The contractor shall keep copies of all reports for at least five (5) years from the issue date. All reports shall be in a format as agreed with the Service Manager from time to time.

## 2.5 Invoicing and Payment

Within one week of receiving a payment certificate from the *Service Manager* in terms of core clause 51.1, the *Contractor* provides the *Employer* with a tax invoice showing the amount due for payment equal to that stated in the *Service Manager's* payment certificate.

The *Contractor* shall address the tax invoice to Finance Department and include on each invoice the following information:

Name and address of the *Contractor* and the *Service Manager*;  
 The contract number, Blanket Purchase Order Number and title;  
*Contractor's* VAT registration number;  
 The *Employer's* VAT registration number 4930138393;  
 Description of service provided for each item invoiced based on the Price List;  
 Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT;  
 (add other as required)

## 2.6 Insurance Provided by the Employer and Service Provider

Refer to the section C1.4 above under PART C1: AGREEMENT AND CONTRACT DATA

## 2.7 Training Workshops and Technology Transfer

The Solar Plant technology is new to Cape Town International Airport and requires specialised maintenance procedures and monitoring equipment for efficient operations and analysis. The *Contractor* is therefore expected to improve the efficiency of the associating assets and equipment on a regular basis. This will ultimately impose amendments to current ME procedures and drawings - even to the extent that new supplement procedures and drawings are developed.

With the above in mind, the *Contractor* shall as part of the service present such efficiencies; new technologies & new procedures, in a manner which can be used as training workshops to the ACSA electrical team. The format of the presentations may be in the form of SOP, Power Point Presentation, Movie Clip, hard copies, etcetera. It is expected that the contract host these training workshops every 3 months and may book the utilisation of the ACSA boardroom facilities through the Service Manager.

Training workshops shall target practical competencies with reference to preventative- and breakdown maintenance activities, of all the electrical team members. The contractor shall create and develop a "Training File" which must be handed over at the end of every 3 months with the following information:

- Topic of Training
- Operational and Technical Manuals with drawings, of specific equipment involved
- Attendance Register of attendees
- Movie clips of physical activities performed to demonstrate competence of attendees.
- Pictures where applicable
- Etcetera

## 2.8 Design and Supply of Equipment

The *Service Manager* will require the inspection of all the tools and equipment that the *Contractor* intends using to execute the maintenance of the Solar Plant as per the scope of work. The inspection will include a demonstration of how the equipment works as well as the confirmation of the calibration certificates for all the equipment that requires calibration. This is to ensure that the *Service Manager* has satisfied themselves that the equipment is of good quality, appropriate for the works and has valid calibration certificates. All maintenance, repairs and liability remains with the *Contractor* as the tools and equipment belong to them.

## 2.9 Things provided at the end of the service period for the Employer's use

### 2.9.1 Equipment

The *Contractor* shall hand-over any equipment and tools which was procured during the service period and claimed for to be paid by the *Employer*.

### 2.9.2 Information and Other Things

During the duration of the contract, the Contractor will acquire extensive intellectual property about the associated assets, equipment and procedures. Any such intellectual property must be handed over to ACSA at the end of the Service period. These will include, but is not limited to, the following:

1. Reports
2. Memorandums
3. Drawings
4. Operating Manuals
5. Service History Books
6. Pictures
7. Movie Clips
8. Audio Clips
9. Spreadsheets / Databases
10. Meeting Minutes
11. Communiqués
12. Files
13. Warranties

## 2.10 Management of work done by Task Order

Not Applicable

## 3 Health and Safety, the Environment and Quality Assurance

### 3.1 Health and Safety Risk Management

The *Contractor* shall comply with the health and safety requirements contained in section C1.3 above under PART C1: AGREEMENT AND CONTRACT DATA

The *Contractor* shall be fully responsible for compliance to the Occupational Health and Safety Act for all its employees on site, equipment and installations relating to this contract. The *Contractor* is expected to sign the undertaking in this regard.

It shall be the *Contractor's* responsibility to ensure that all relevant labour, safety legislation and applicable compliance are adhered to in this contract. Regulations as set out in the safety induction shall be obeyed at all times.

The *Contractor's* employees on site shall obey all health and safety rules, procedures and practices. In particular, NO SMOKING signs and the prohibition of the carrying of smoking materials in

designated areas shall always be obeyed. A copy of the Safety Rules booklet is available on request from the ACSA Safety Department.

All the applicable requirements of the Occupational Health and Safety Act (1993) and Regulations and any amendments thereto, shall be met. Where the OHS Act prescribes certification of competency of persons performing certain tasks, proof of such certification shall be provided to the *Service Manager*.

The *Contractor's* Workmen's Compensation fees must be up to date. A copy of the *Contractor's* WCA registration shall be produced on request.

The following areas in the company are declared as "HOT WORKS PERMIT" areas:

- All airside areas
- All areas accessible to the public
- All enclosed areas
- The terminal building

Any process in the above mentioned areas involving open flames, sparks, or heat shall be authorised by the issue of a permit to work - obtainable from the ACSA Safety department. Any work done under the protection of a permit to work shall be in strict compliance with every prescription regarding the permit.

Safety equipment shall be used where applicable (e.g. safety goggles, boots, harness, etc.) The *Contractor*, at their own expense shall provide such equipment, for their employees. The *Contractor* shall apply the necessary discipline and control to ensure compliance by their workers.

All contractors must ensure that their employees are familiar with the existing emergency procedures, emergency assembly points and must co-operate in any drills or exercises, which might be held.

Emergency / fire equipment and extinguishers shall not be obstructed at any time. No person shall perform an unsafe / unhygienic act or operation whilst on Company premises. No unsafe/dangerous equipment or tools may be brought onto or used on Company premises.

The Company reserves the right to inspect all equipment/tools at any time and to prevent/prohibit their use, without any penalty to the Company and without affecting the terms of the Contract in any way.

The *Employer* reserves the right to act in any way to ensure the safety/security of any persons, equipment or goods on its premises and will not be liable for any costs or loss evoked by the action. This includes the right to search all vehicles and persons entering, leaving or on the premises and to inspect any parcel, package, handbag and pockets. Persons who are not willing to permit such searches may not bring any such items or vehicles onto the premises.

The *Contractor* shall maintain good housekeeping standards in the area where he is working for the duration of the contract. At no time must the *Contractor* interfere with, or put at risk, the functionality of any Sprinklers and/or fire prevention system. Care must also be taken so as to prevent fire hazards.

The *Contractor* is required to issue all staff with standard uniforms. This shall as a minimum include: safety shoes, overalls (clearly marked with *Contractor's* company logo) and numbered reflective jackets (as per Airport requirements). All costs relating to uniforms shall be for the *Contractor's* account.

#### **Cell phones and two-way radios**

- Use of cell phones on airside is not permitted unless the user is in possession of an appropriate Airport permit for the device. Cell phone permit issuing authority lies with the ACSA Security department.

### 3.2 Environmental Constraints and Management

The Contractor will keep noise and dust levels to a minimum. At no time shall his/her work result in nuisance, interference or danger to the public or any other person working at the Airport.

At no time shall the Contractor:

1. Allow any pollutive or toxic substance to be released into the air or storm water systems
2. Interfere with, or put at risk, the functionality of any system or service
3. Cause a fire or safety hazard

Cape Town International Airport has an ISO 14001 accreditation. This will need to be maintained at all times by ensuring that Environmental legislation is followed and adhered to.

The Contractor shall comply with the environmental criteria and constraints stated in section C1.5 above under PART C1: AGREEMENT AND CONTRACT DATA

### 3.3 Quality Assurance Requirements

Emphasis must be on improving system reliability and on ensuring that rostered maintenance work is indeed performed as and when required.

The *Contractor* shall ensure that works are carried out as per the Airport Company South Africa procedures and OHS Act. Inspections prior and post work are to be carried out to ensure site cleanliness and serviceability. Adherence to safety and good housekeeping must be maintained at all times. The facility handover process will be carried at the end of each service.

All work must be executed in accordance with prevailing industry norms and standards relating to quality. In this regard, the *Contractor* will be expected to draft quality plans for the *Service Manager* from time to time.

Apart from the compliance to the defined ACSA M&E Procedures, a measure of ensuring quality of work will be adherence to the following (where applicable):

1. The Occupational Health and Safety Act (85 of 1993)
2. Environmental Conservation Act (50 of 2003)
3. Civil Aviation Act (13 of 2009)
4. Municipal bylaws and regulations
5. Standards and specification of ACSA
6. Standards and specifications of the supply authority (Eskom)
7. Applicable standards and codes of practice:
  - a. SANS 10142-1&2 : Code of Practice for the Wiring of Premises, Low Voltage and Medium Voltage Installations
  - b. IEC 61730-2 : Photovoltaic (PV) Module Safety Qualification – Part 2: Requirements for Testing.
  - c. IEC 62716 : Photovoltaic (PV) Modules – Ammonia Corrosion Testing
  - d. IEC 62446 : Photovoltaic (PV) Systems – Requirements for Testing, Documentation and Maintenance
  - e. IEC 60364-6 : Low Voltage Electrical Installation - Verification
  - f. Operating Regulations for High Voltage Systems (ORHVS)
  - g. OEM Manuals and Operating Procedures
  - h. NRS 097-2-1:2017 – Grid Interconnection of Embedded Generation (Small Scale Embedded Generation)
  - i. Applicable grid connection (local bylaws) requirements from Eskom, the power supply provider at Cape Town International Airport.

## 4 Procurement

This type of contract caters for a priced contract with price list and reimbursable items – as required, as described under Option A of the NEC 3 Term Service contract.

Additionally, the *Contractor* will respect OEM warranties to ACSA at all times when procuring spare parts, products or 3rd party services. It will be the *Contractor's* sole responsibility to ensure that OEM warranty requirements are adhered to at all times.

Where Contractors use or quote on spare parts of a lower quality than recommended by the OEM, or parts not recommended by the OEM, this shall be clearly indicated to the *Service Manager* on the quotation. This also implies that the *Contractor* will have to build relationships with the various key OEMs.

The Contractor must adhere to all airport requirements when procuring equipment or spares. No casual labour (i.e. “off the street” labour) may be employed by the *Contractor* unless pre-arranged with ACSA. Whenever this is required, the *Contractor* shall come to a suitable arrangement with ACSA regarding sourcing and screening of such individuals.

No undefined (Price List) expenditure will be allowed to claim for by the *Contractor*. Where the need arises for such items - it must be clearly motivated for and approved by the *Service Manager*. The *Contractor* is obliged to deliver or provide all necessary material and equipment to execute the works (e.g. measuring instruments and tools) and small items (e.g. lubricants and cleaning agents).

### 4.1 People

#### 4.1.1 Minimum requirements of people employed

The *Contractor* is to provide the service with their own staff or by qualified subcontractors when agreed to by the *Service Manager*.

It is noted that the *Employer* does not list the formal qualifications and experience required under this contract. It will always remain the *Contractor's* responsibility to ensure that staff are suitably qualified, experienced and accredited by the relevant body, council or organisation to perform the duties expected of them.

The *Employer* reserves the right to verify all qualifications and experience of personnel employed under this contract. Furthermore, ACSA reserves the right to order that personnel that are not adequately qualified, experienced or suited for this contract are removed from the site

The *Contractor* will be responsible for providing staff which are sufficiently skilled and qualified for successful execution of the works.

The *Contractor* shall ensure that all maintenance staff are issued with uniforms that will comply with a minimum requirement as agreed with the *Service Manager* from time to time. Current airport requirements are: safety shoes and a uniquely numbered reflective jacket (for easy identification).

All individuals that will be required to have access onto the airport's airside need to undergo the following training:

1. Airside Induction Training (AIT)
2. Airside Vehicle Operator Procedures (AVOP) (Category 2)
3. Airport SMS Induction (briefing)

All individuals that will be required to have access into the airport's electrical restricted areas need to undergo the following training:

1. ORHVS (Module 1-4 as a minimum)
2. First Aid Training
3. Fire Extinguisher Training

For all staff and senior personnel dedicated to this contract, the following must be submitted in detail:

- Full Names of staff to be involved with this contract.
- Proof of qualifications and work experience where applicable
- Staff must be in permanent employ of the company.
- Competent in category of work that he or she is required to perform.

#### 4.1.2 BBEE and Preferencing Scheme

In order to qualify for B-BBEE recognition, ACSA will only accept B-BBEE certificates from SANAS accredited verification agencies and IRBA approved auditors as proof of B-BBEE status.

## 4.2 Subcontracting

### 4.2.1 Preferred Subcontractors

No part of this Contract may be subcontracted unless with written approval from the *Service Manager*. The *Service Manager* shall be under no obligation to grant such approval. Should any part of this contract be subcontracted the *Contractor* will be responsible for all Works (or failure to effect the Works) as if it was done so by the *Contractor*.

Considerations for subcontracting will be entertained when specialist services need to be obtained from a particular supplier or group of suppliers in order to comply with operational standards.

Specialist service providers that may be sub-contracted are defined below:

1. OEM of critical PV & MV equipment
2. Transformer Manufacturer
3. MV Protection Specialist Services
4. Power Factor Correction Specialist

## 4.3 Plant and Materials

### 4.3.1 Specifications

The *Contractor* shall use only tools and test equipment relevant to the operation, repair and maintenance of the PV plant installation, including associated MV and LV infrastructure. All test equipment used shall be calibrated as per regulation to ensure accurate measurement results at all times. Proof of calibration certificates needs to be issued on request by the *Service Manager*.

All tools used shall be safe and in good working condition. All electrical tools shall be properly insulated to alleviate electrocution risk. All tools used needs to be inspected and recorded in the tool inspection sheet. The *Service Manager* reserves the right to have access to the maintenance records of the *Contractor's* plant and equipment, when requested.

Only materials with acceptable quality must be used as part of the services. Where an industry norm certification (SABS, expiry date, etc.) cannot be determined, then the *Service Manager* must be afforded the opportunity to inspect and authorise the items prior to it being delivered onto ACSA premises.

### 4.3.2 Correction of Defects

The *Contractor* shall report any defects (equipment & material) experienced whilst performing the services. Any defective plant / equipment (unserviceable) or material (unacceptable quality) shall be removed immediately from ACSA's premises. The *Contractor* shall ensure that replacement (backup / leased / new) equipment and material is sourced immediately in order to comply to the contractual conditions of the services.

All defects and non-conformances must be corrected immediately. Constraints that can prevent this must be communicated to the *Service Manager* (or his delegated person) is listed below:

1. Airport operations that will be interrupted with a direct effect of revenue income. Hence the work must be scheduled for after operational hours.

2. Lack of spares or expertise. Hence the work will be scheduled to be completed after the procurement of the required spares or specialist services.

Should the identified defect have a negative influence on the safety of persons or critical equipment - then the *Contractor* must inform the *Service Manager* (or his delegated person) to activate ACSA's relevant internal emergency procedures in an effort to mitigate the risk as fast as practicably possible.

Any breakdown impacting on operations shall be attended to and restored to a good and reliable working condition. This implies that no breakdown may be left unattended or incomplete for the next day or shift. The *Employer* will hold the *Contractor* liable for any costs incurred by any party as a result of negligence or unreasonable poor performance by the Contractor including excessive time taken to effect repairs.

#### **4.3.3 Contractor's Procurement of Plant and Materials**

The *Contractor* shall ensure that all plant and materials are procured from legitimate businesses with valid Tax Clearance Certificates. All associated invoices must be submitted with the monthly reports.

All applicable warranties from suppliers to be made out in favour of the *Employer* and not just to the *Contractor*. The *Contractor* will provide (and regularly update) a schedule of the *Contractor's* vendor data to the *Employer* for use outside of this contractual agreement.

The *Contractor* must provide original quotations (from the third party service providers / suppliers) for formal approval by the *Service Manager* prior to the procurement of these third-party items.

Required spares and services that fall outside of the Price List, must be submitted in the form of a Scope document to the ACSA electrical team - in order for it to be procured by way of the ACSA internal procurement policies and procedures.

#### **4.3.4 Tests and Inspections Before Delivery**

The *Contractor* is to provide proof of manufacturer's certificate for spares procured during this contract. The certificate should contain the factory tests conducted and the relevant statutory approval (accreditation) for the spare parts purchase.

## 5 Working on the Affected Property

### 5.1 Employer's site entry and security control, permits, and site regulations

Where applicable, the *Contractor* shall be required to adhere to the Airport site entry requirements i.e. when maintaining the PV plant associated infrastructure located at the electrical complex on airside - they will have the required permits and adhere to the airside regulations.

#### Permits

The *Contractor* shall not be compensated for costs relating to ACSA required permits, nor for labour/time spent in obtaining it. An allowance must be made in the Activity Schedule in this regard.

The *Contractor* must ensure that they are at all times, familiar with ACSA's safety and security requirements relating to permits in order for no work to be delayed as a result thereof. This will include the permit application process.

Note that (within reason) the *Contractor* will have no claim against ACSA in the event that a permit request is refused.

The following table is not all inclusive, but is provided for illustration purposes:

Permit	Required by/for	Department
AVOP – Airside Vehicle Operator permit	All drivers of vehicles on airside	ACSA Safety
Airside Vehicle Permit	All vehicles that enter airside	ACSA Safety
Personal permit	All persons employed at the airport	ACSA Security
Cell phone permit	All persons taking cell phones to the airside	ACSA Security
Lap top permit	All persons taking lap top computers to airside	ACSA Security
Camera permit	All persons taking cameras or camera equipment to airside	ACSA Security
Hot Works Permit	All welding and/metal cutting work	ACSA Safety

Proof of having attended the airside induction training course is required for all personal permit applications. Persons applying for an AVOP must provide proof of having attended an AVOP course. Fees are levied for these courses. Fees are further levied for all permit renewals and refresher courses - where applicable.

### 5.2 People restrictions, hours of work, conduct and records

The *Contractor* will be required to complete a register for all the duties performed on the Airport. The *Contractor* shall be required to sign the Work Order issued for services rendered. This service will be conducted outside of the Airport's operational hours or afterhours.

### **Cell phones and two-way radios**

Use of cell phones on airside is not permitted unless the user is in possession of an appropriate Airport permit for the device. Cell phone permit issuing authority lies with the ACSA Security department.

The *Contractor* will not be allowed to use two-way radios at the Airport unless these radios are of the type, model and frequency range as approved by the ACSA IT department

The *Contractor* must keep detailed records of all people (including subcontractors) working on the affected property.

The working hours of the contractor must not influence the generation capacity of the PV plant. Therefore, the work needs to be scheduled accordingly, during airport operational hours if no effect and after operational hours when it will effect plant operations.

The *Contractor's* conduct must be at all times of a professional nature with effective courtesy and integrity.

### **5.3 Environmental controls, fauna & flora**

All general environmental concerns and requirements is referred to the ACSA environmental policy defined in Section C1.5 above under PART C1: AGREEMENT AND CONTRACT DATA.

### **5.4 Cooperating with and obtaining acceptance of Others**

The *Contractor* will generally work in close relation to the ACSA electrical team. However, cognisance should be made to respect the operations and be courteous to the other departments (ARFF, AVSEC, Operations) on the airport.

The *Contractor* will liaise and accept notified (and ad hoc) engagements with statutory authorities and inspection/audit teams (agencies).

The *Contractor* needs to understand that the Airport may have more than one activity happening at the Airport and therefore shall be required to share the areas where they will be performing a service.

### **5.5 Records of Contractor's Equipment**

The contractor is to keep record of equipment used on site. The record sheet should contain all the equipment relevant information. The record will be checked by Aviation Security during both entry and exit to the Airside.

At the start of the contract period, the contractor will submit a detailed list (make, model, serial number etc.) of equipment and tools that will be taken and used on ACSA premises - for approval by the *Service Manager*. This list must be approved regularly as and when amendments to it, occur.

As part of the monthly report the contractor needs to indicate in writing when extraordinary equipment (outside of the original equipment list referred to above) will / have been brought onto (or removed from) ACSA premises. If need be a special permission slip for this must be formulated to be signed by the *Service Manager* for this purpose.

The various approved lists must be at all times made available to the AVSEC department (including their contracted service provider) on request.

## 5.6 Site Services and Facilities

### 5.6.1 Provided by the Employer

The *Employer* will provide the contractor with access to the PV plant and the maintenance complex as and when required.

The *Contractor* and his/her staff will utilise the ablution facilities in the maintenance complex. No ablution facilities may be used in the terminal building.

The *Employer* will provide space for the *Contractor* to erect a site office and/or yard in the maintenance complex, should they wish to do so.

### 5.6.2 Provided by the Contractor

The contractor will provide necessary tools, equipment, Protective Clothing and all consumables required to conduct the service.

In the event of a site office/ yard, access control will be agreed between the *Service Manager* and the *Contractor* accordingly. Also in this event, the *Contractor* must make provision for ablution facilities as part of the site office establishment. Any site office / yard establishment requirements will be for the *Contractor's* own cost. The site office / yard must be de-commissioned at the end of the service period and the surface must be rehabilitated to its surrounding area accordingly.

## 5.7 Control of noise, dust, water and waste

The *Contractor* shall be required to keep the noise and dust at low levels and as well as conserve the scarce resources such as energy & water. Waste shall be disposed at the registered waste sites according to the Municipal By-Laws.

## 5.8 Hook ups to existing works

In the event that the *Contractor* wishes to establish a site camp and/or yard, the required services (electrical; sewer; water) will be billed for on a monthly basis.

## 5.9 Tests and Inspections

### 5.9.1 Description of tests and inspections

The contractor shall ensure that all required tests and inspections are performed in order to comply and produce documented results to the **optimum energy yield** and the **performance ratio** of the PV plant which can be found in Annexure I of C4 (Site Information).

The Contractor will complete regular inspections which will monitor the actual conditions of the *Affected Property*., based on the relevant design.

All the additional inspections will be developed by the *Contractor* and Approved by the *Service Manager*. Amongst others still to be developed, the following inspections will be completed:

1. Monthly PMs
2. 3-Monthly PMs
3. 6-Monthly PMs
4. Annual PMs
5. Other

## 6 List of drawings

### 6.1 Drawings Issued by the Employer

None

## PART C4: SITE INFORMATION

Cape Town International Airport is located approximately 20km east of the city of Cape Town, in a suburb called Matroosfontein. The N2 highway connects the airport to the city centre.

Cape Town has a temperate Mediterranean climate with hot summers and mild, rainy winters. The geography of the Peninsula means there are several microclimates.

### ANNEXES to C4

<b>Title</b>	<b>Annex number</b>
Location of the Property	Annex A
Scheduled Maintenance Work as priced in Price List in C2.2	Annex B
SLA Monthly Service Report Template	Annex C

**ANNEXURE A: Location of the Property**

The GPS location co-ordinates for the three areas of installation is listed in the table below:

Item	Location	Longitude	Latitude
1	Parkade 1 - Close to International Departures)	18°35'42.3" E	33°58'03.0" S
2	Parkade 2 – Close to the South Office Block	18°35'46.2" E	33°58'14.0" S
3	Oval Office Park – Enroute to Cargo Offices outside the Airport Terminal	18°35'30.7" E	33°57'58.8" S

The Solar Plant shall be installed on roof tops in three (3) areas in the airport, Parkade 1 and 2 as well as the Oval Office Park. Parkade 1 and Parkade 2 are located on Ring Road opposite the terminal building as indicated and labelled in red below. The Oval Office Block, which houses the Weather Office, among other occupants of the building, is located outside the airport precinct on Freight Road.



**ANNEXURE B: Planned Solar Plant Maintenance**

<b>Solar Plant Maintenance Activities</b>		
<b>1</b>	<b>Module Inspection and Cleaning</b>	<b>Frequency</b>
1.1	Module cleaning is a simple but important task. It can produce significant and immediate benefits in terms of energy yield. The frequency of module cleaning will depend on site conditions (for example, prevalence of dust or rain) and the time of year. The site is approximately 4 400 metres from the coast and the installation may be lightly affected by salt water in the air originating from the ocean.	Every 3 Months
1.2	Module cleaning must consider environmental and human factors (like, autumn fall debris, soiling from roads and agricultural activities).	
1.3	Weather patterns must be established to identify required cleaning during rainy and non-rainy periods.	
1.4	High wind speeds should be taken into consideration when executing maintenance on roof mounted solar panels and extra care to be exercised during those conditions.	
1.5	Cleaning shall be scheduled as necessary, specifically when the PV plant efficiency falls below expectation.	
1.6	Optimum frequency of cleaning can be determined by assessing the cost and benefits of conducting the procedure. The benefit of cleaning shall be seen in an improved performance ratio due to lower soiling loss and an increase in electricity generation.	
1.7	Clean the modules with water and a sponge or in accordance with OEM recommendations and requirements. No metal brush to be used.	
1.8	Remove dirt, dust, bird droppings and debris from the surface of the panels as well as from under the panels to prevent build up of debris that may cause roof corrosion due the backing up of rain water.	
1.9	Panel discolouration and signs of moisture ingress may indicate an internal panel fault. Conduct a visual inspection for cracks, chips or glass breakage, yellowing/browning or discolouration, moisture ingress, fogged glazing and delamination.	
<b>2</b>	<b>Module Connection Integrity</b>	
2.1	Checking module connection integrity is important for PV systems, as faults within each string of modules may be difficult to detect.	Every 2 Months
2.2	Check connections between modules within each string as required. Check on integrity and completeness of all electrical cables from PV module to connection point.	
2.3	Measure the string current and string impedance.	
2.4	String connection integrity shall additionally be monitored with the installed string level monitoring system	
2.5	Visual inspection of terminal connections and panel cabling – cable tightness, terminal box watertight, cleanliness, clamping, etc.	

<b>Solar Plant Maintenance Activities</b>		
<b>3</b>	<b>Junction/String Combiner Box</b>	<b>Frequency</b>
3.1	Conduct a visual inspection of all Junction/String combiner boxes for: box screw tightness, incoming and outgoing cable and conduit tightness, cable labelling, ingress, dirt & dust accumulation so as to prevent corrosion and or short circuits inside the boxes.	Every 3 Months
3.2	Check the integrity of all the connections in the boxes. Loose connections will affect the overall PV plant performance.	
3.3	Check condition of wires/cables for any damage or discolouration.	
3.4	Check on proper functioning of string fuses, circuit breakers, DC disconnect switch and earthing, cable etc in the boxes. Loose connections will affect the overall PV plant performance.	
3.5	Electrical Insulation and grounding measurement of DC and AC cables.	
3.6	Check and verify the labelling on electrical cables.	
<b>4</b>	<b>Hot Spots/Infrared Scanning</b>	<b>Annually</b>
4.1	Thermography scan shall be performed across the entire PV plant to detect potential faults and prevent devastating breakdowns.	Annually
4.2	Thermography shall be conducted by a trained specialist using a thermographic / infrared camera. A detailed report with pictures of all string connections, junction boxes, inverters, MV infrastructure & LV infrastructure shall be compiled accordingly.	
4.3	The report will identify weak and loose connections plus hot spots, which need to be corrected immediately to extend the lifetime of the panels.	
<b>5</b>	<b>Inverter Servicing</b>	<b>As per OEM Requirements</b>
5.1	Inverter faults are the most common cause of system downtime in PV plants and shall be mitigated by stringent scheduled maintenance of inverters. The basis of the inverter servicing requirements shall be obtained from the specific equipment manufacturer. The local operational conditions and performance of the PV plant will influence the improved inverter servicing specifications.	As per OEM Requirements
5.2	Minimum servicing specifications will include visual inspection of inverters, inverter enclosures, earth connections, cables and connection of components.	
5.3	Checking and verification of proper functioning of isolation switches, cooling fans and cleaning of external air filters.	
5.4	Removal of dust from electronic components; tightening of any loose connections (cable); Additional analysis and diagnostics recommended by the manufacturer.	
5.5	Check if the inverter runs smoothly without producing strange noises.	
5.6	Check inverter temperature while running during the day and verify that ventilation is working properly, and inverter operating temperature is within manufacturer's recommended range	
5.7	Periodic efficiency measurement (DC/AC conversion from inverter meter).	
5.8	Checking and replacement of ventilation system - as per manufacturer's recommendation	
5.9	Control and LED operation (Indication LED's).	

<b>Solar Plant Maintenance Activities</b>		
<b>6</b>	<b>Structural Integrity</b>	<b>Frequency</b>
6.1	Check periodically the module mounting assembly, module frame condition, cable conduits & related structures for mechanical integrity, loose or missing clamps and signs of corrosion on the frame/mountings or structure and screws.	Every 3 Months
6.2	Inspect support structure foundations for evidence of erosion from <i>inter alia</i> water run-off.	
6.3	Check if the module is still firmly fixed to the module structure and torque the module mounting screws.	
6.4	Check that roof penetrations are adequately sealed against water leaks	
<b>7</b>	<b>Balance of Plant</b>	
7.1	Service all other PV plant auxiliary and ancillary systems which include monitoring and security systems; auxiliary power supplies; communication systems; etcetera.	Monthly
7.2	Inspect and verify signal strength and continuation of connection of the communication systems within the PV plant as well as to all other external systems. Check and monitor alarms, events and communications.	
7.3	Visual inspection (status, connections and functionality) and torque all connections.	
7.4	Check on status of fuses, circuit breakers and safety switches.	
7.5	Carry out AC Voltage readings.	
7.6	Check legend card for correctness.	
<b>8</b>	<b>MV Switchgear and Transformer</b>	
8.1	The Contractor shall use the Standard Operating Procedure for Maintenance of MV Switchgear and Transformers to determine the frequency for the visual checks and take that into consideration for the pricing for this activity.	Monthly
8.2	MV Switchgear maintenance shall include amongst others: moisture inspection; inspect switchgear connections for corrosion; Check cable terminations are properly arranged and not cracked or stripped of insulation; circuit breaker inspection (securely mounted and wiring properly installed), check the racking mechanism and shutter operation; test interlock functions and check relays for proper operation; inspect all switchgear insulation for damage; various tests as per manufacturer's specification.	
8.3	Transformer maintenance shall include but not be limited to: oil sampling, testing and analysis; replace silica gel; thermal infrared scanning of transformer terminations; various tests as per manufacturer's specification.	
8.4	Power Factor Correction Equipment maintenance shall include visual inspection for damage, checking capacitor values, checking for loose connections, inspecting filters and fans, testing insulation resistance, monitoring control relays, etc	
<b>9</b>	<b>Earthing Integrity</b>	
9.1	Carry out visual inspections of earthing installation and tighten all earth connections.	Every 3 Months
9.2	Check Bonding between earth mat, all steel structures and various earth bars.	

<b>Solar Plant Maintenance Activities</b>		
<b>10</b>	<b>LV Cabling Integrity</b>	<b>Frequency</b>
10.1	Check on proper status of all AC electrical & Comms cables (from Inverter to Distribution Kiosk).	Annually
10.2	Verification of water tightness of all electrical cables and conduits.	
10.3	Check mechanical integrity of wire ways.	
10.4	Infrared scanning of terminations.	
10.5	Visual check of cable labels/numbers.	
<b>11</b>	<b>Meteorological Stations and Monitoring Systems</b>	<b>Annually</b>
11.1	Status of Meteorological Stations (Irradiance & Temperature Sensors).	Annually
11.2	Check of connection on meteorological components and communication with monitoring system.	
11.3	Check on on-line record of energy output and irradiation through remote monitoring system.	
11.4	Check on Alarm, Event and Status Database – through remote monitoring system.	
11.5	Check on on-line record of availability of each inverter and availability of the plant – through remote monitoring system.	
<b>12</b>	<b>I-V Curve Measurement</b>	<b>Twice a Year</b>
12.1	I-V Curve measurement of strings can provide the following information: Measurements of string open circuit voltage (Voc) and short circuit current (Isc); Measurements of max power voltage (Vmpp), current (Impp), and max power (Pmax); Measurement of string performance; Measurement of module / string fill factor; Identification of module / string defects or shading issues	Twice a Year
12.2	IEC 61829 standard shall be followed (in addition to the points noted above) for the requirement of the inspection equipment, inspection procedure, evaluation, minimum environmental conditions and reporting required for performing the outdoor IV curve testing	
12.3	Before undertaking an I-V curve test, the I-V curve test device shall be checked to ensure it is suitably rated for the voltage and current of the circuit under test.	
12.4	Given suitable irradiance conditions, an I-V curve test provides a means to assess that the performance of a PV string / module is meeting the rated (nameplate) performance	
12.5	IEC 61829 standard shall be followed for the requirement of the inspection equipment, inspection procedure, evaluation, minimum environmental conditions and reporting required for performing the outdoor IV curve testing	
<b>13</b>	<b>OEM Monitoring Software Licence</b>	<b>Annually</b>
13.1	Annual licence subscription renewal, if applicable	Annually

<b>Solar Plant Maintenance Activities</b>		
<b>14</b>	<b>Training of ACSA Personnel</b>	<b>Every 3 Months</b>
14.1	Training to include plant monitoring, identifying plant normal and abnormal operations and resolving plant abnormalities during actual plant operation.	
14.2	Training to illustrate the different modes of plant isolations that may be required as per the Plant Safety Regulations and Operating Regulations for High Voltage Systems (ORHVS).	
14.3	Where required, formal classroom training (with material) shall be provided training of the operations and maintenance to ensure Employer's representatives have a sound understanding of the plant layout, characteristics and functionality.	
<b>15</b>	<b>Vegetation Management</b>	<b>Frequency</b>
15.1	Check for bees, wasps, hornets and other insects that can nest under a PV module or another sheltered place.	<b>Monthly</b>
15.2	Vegetation control and ground keeping are important scheduled tasks for the solar PV plant, as vegetation over-growth (i.e. long grass, trees or shrubs) can shade the modules - which will reduce the generation capacity of the module. Vegetation inspections and maintenance need to be conducted monthly, where required.	
15.3	Ground keeping activities need to be performed to reduce the risk of soiling onto the modules by way of leaves, pollen or dust.	
<b>16</b>	<b>General</b>	
16.1	Generate Monthly reports on system performance	<b>Continuously</b>
16.2	Periodic verification and test methodologies shall be prepared according to requirements defined in IEC 62446, IEC60364-6 and according to the current best commissioning practice.	
16.3	Continual performance monitoring and error reporting of the system on a daily basis	
16.4	Replacing of spare parts as and when required	
16.5	Management of equipment warranties, interfacing with equipment provider and managing logistics in replacing equipment	
16.6	All equipment covered by the preventative maintenance scope is subject to corrective maintenance for wear-an-tear and breakage under normal conditions	
16.7	List of damage and faults verified	
16.8	List of corrective maintenance service performed	

<b>Solar Plant Maintenance Activities</b>		
<b>17</b>	<b>Unscheduled/Corrective Maintenance</b>	<b>Frequency</b>
17.1	Unscheduled maintenance includes at all times during the contract period and in all cases attending to and repairing breakdowns and failures of the components of the plant caused by wear and tear and/or breakages under normal operating conditions to ensure that the plant operates normally (in the desired condition) throughout the duration of the O&M Period.	Continuously
17.2	Unscheduled maintenance is carried out in response to failures which shall be responded to on-site within 2 hours of when the call is logged. Where possible the fault can be rectified remotely. Diagnostics of the breakdown should be verbally given to ACSA within the first hour of arriving on-site.	
17.3	Documented detailed diagnostics must be given to ACSA by latest close of business the following day.	
17.4	Repair time of the plant shall be within 48 hours as a worst case scenario. Only under special conditions and on agreement with ACSA can the defect be isolated and repaired beyond the 24 hour time frame.	
17.5	Unscheduled maintenance is carried out during the preventive maintenance visits (if the faults/failures do not affect energy production) or when the remote monitoring system registers an operational problem.	
17.6	A Contractor shall conduct a problem diagnosis, performance notification, and identification of which parts need to be replaced.	
17.7	Supplying the replacement component parts in the event of failure or anomaly.	
17.8	Repairing or replacing, when necessary, the affected component/equipment from inventory and bringing the plant back in working condition. Purchasing and transporting the replaced component and keeping the inventory at the level defined by the Contractor.	
17.9	Where market conditions prevent the supply of parts identical to those already installed. The Contractor proposes replacement parts for the Employer's acceptance. Proposed replacement parts should not result in a reduction below the rated output or efficiency of the plant. The Contractor is responsible to update any plant drawings, catalogues, manuals for such a replacement once approval has been obtained from the Employer. The Contractor repairs or replaces (with the spare parts) the affected item immediately or, under all circumstances, within the time frame agreed with the Employer.	
17.10	In case where an immediate repair or replacement is not possible due to the lack of sufficient availability of components in inventory, the Contractor to propose a temporary solution to the Employer for approval to mitigate the risk of production losses, prior to implementation of the solution.	
17.11	All work related to the corrective maintenance of each component or part must be performed in accordance with the relevant manufacturer's manual and recommendations. All materials, components and parts used by the Contractor must be new.	
17.12	The Contractor warrants the absence of defects on any repair, replacement and generally on any activities of corrective maintenance for two years in case of replacement or repair.	
17.13	Tightening of cable connections that have loosened, as required.	
17.14	Repairs of MV and LV, AC as well as DC cable failures.	
17.15	Replacing blown fuses and resetting tripped circuit breakers.	
17.16	Repairing lighting damage.	
17.17	Repairing equipment damaged by intruders or during module cleaning.	
17.18	Rectifying SCADA faults.	
17.19	Repairing mounting structure faults.	
17.20	Rectifying tracking system faults.	

<b>Solar Plant Maintenance Activities</b>		
<b>18</b>	<b>Performance Monitoring, Evaluation and Optimisation</b>	<b>Frequency</b>

18.1	To optimise system performance, there is a need to ensure that the plant components function efficiently throughout the lifetime of the plant. Continuous monitoring of PV systems is essential to maximise the availability and yield of the system. The SCADA system is able to monitor the real-time efficiency and continuously compare it with the theoretical efficiency to assess if the system is operating optimally. This information shall be used by the contractor to establish the general condition of the system and schedule urgent repair or maintenance activities such as cleaning.		Continuously
18.2	Report on plant performance ratio and plant availability.		
18.3	Report on energy production recorded through inverters, meters at site and meters at point of connection.		
18.4	Report on meteorological measurement on site.		
18.5	Submission of raw and processed data on meteorological measurements and performance measurement to the Employer.		
18.6	Report on status of plant component and status of preventive maintenance.		
18.7	Report on alarms, events and status recorded.		
<b>19</b>	<b>Inventory</b>		<b>Frequency</b>
19.1	The availability of spares facilitates a rapid response and PV plant serviceability. Therefore a suitably stocked spares inventory is required.		Continuously
19.2	When spares are utilised, the contractor shall replenish the stock levels as soon as possible.		
19.3	Consultation with manufacturers to detail the spare parts inventory, based upon estimated component lifetimes and failure rates shall be done.		
19.4	Adequate supplies of the following components shall be held - as a minimum		Quantity
	19.4.1	Mounting structure pieces	10
	19.4.2	Junction combiner boxes	3
	19.4.3	Fuses	10
	19.4.4	Circuit breakers	10
	19.4.5	DC cabling components	10
	19.4.6	AC cabling components	10
	19.4.7	Communication equipment	5
	19.4.8	Modules	3
19.4.9	Spare Inverters	3	

**ANNEXURE C: SLA Monthly Service Report Template**

**Contract No** :  
**To** : **ACSA (Service Manager)**  
**From** : **Service Provider**  
**Subject** : **SLA Monthly Report – Electrical Maintenance**  
**Reporting Period** : **May 2017**

**1. Executive Summary / Introduction**

*A short introduction needs to be given regarding the activities.*

**2. BACKGROUND**

- *Why the work needs to be done*
- *Why this specific areas was identified with reference to a bigger master plan / previous month's roll-over / breakdown to be repaired / maintenance cycle / etc.!*

**3. DETAILS**

- *Insert the what, why, when and where of the specific activities / non-compliances / Exactly describe the different steps / actions that was completed*
- *Identify special faultfinding methods where necessary*
- *Identify indicators to observe – e.g. water erosion, rain patterns, mole activity, etcetera.....*
- *Refer to attachments (service sheets, other reports , etc.*
- *Include times where necessary*
- *Include drawings where necessary*
- *Include pictures where applicable*
- *Include Tables where necessary*

**4. SOLUTION**

- *Where you able to complete all activities which was planned – if not, why*
- *What is your specialist diagnosis of the system, why*
- *Was the problem fixed (if any) temporarily / permanent*
- *Note changes to documents and drawings, where applicable*
- *Specify whether recourses was used other than the normal shift hours (overtime/ contractors / etc.)*

**5. RECOMMENDATION**

- *This section will close out the document*

Page 1 of 2

- *Is future upgrade / permanent work still required*
- *Is a change in the works program required and why?*

**6. List of Attachments**

*Add the list of all attachments and annexures to the reports. As examples the following original documentation must be attached – in order to supplement the comments made in the other sections of the report above:*

- *Procurement documentation*
  - *Quotations*
  - *Invoices*
  - *Purchase Orders*
  - *Delivery Notes*
  - *Statements*
- *PM's & WO's*
- *Safety Audits*
- *Amended drawings / Procedures*
- *Toolbox talks*
- *Pictures*
- *Accident / Incident Investigation Reports*
- *Breakdown / Failure Reports*
- *Daily Reports*
- *Training certificates / attendance forms*
- *Meeting minutes*
- *Time and Attendance Registers*
- *Etc.*

Compiled by: Your name

Signature: \_\_\_\_\_

Date: \_\_\_\_\_